

2. CO₂ Emissions Standards

2.1. Attribute-based (footprint) approach

Organizations Included in this Section

Alliance of Automobile Manufacturers
Aluminum Association's Aluminum Transportation Group
BMW of North America, LLC
Consumer Federation of America (CFA)
Consumer Reports
Ecology Center
Ferrari
Ford Motor Company
General Motors Company
Institute for Policy Integrity, New York University School of Law
Insurance Institute for Highway Safety (IIHS)
International Council on Clean Transportation (ICCT)
Mercedes-Benz USA, LLC
National Automobile Dealers Association (NADA)
Society of the Plastics Industry, Inc. (SPI)
United Automobile Workers (UAW)
Whitefoot, K. and Skerlos, S.

Organization: Alliance of Automobile Manufacturers

Continued Use of Footprint Attribute [EPA-HQ-OAR-2010-0799-9487-A1, p.85]

The Alliance agrees that footprint is integral to a vehicle's design and is dictated by the vehicle platform, which is typically used for a multi-year model life cycle. As such, it continues to be a reasonable choice for setting standards. Further, since footprint was the basis for all regulatory discussions, it remains the appropriate attribute. [EPA-HQ-OAR-2010-0799-9487-A1, p.85]

Analysis of manufacturer data and understanding of the vehicle energy efficiency dependence on footprint suggests that linear attribute curves based on gpm (gallons per mile) versus footprint is an appropriate way to adjust for size differences across the industry. Vehicle efficiency is driven by road load, mass, and powertrain/driveline efficiency. Regressions of vehicle road load energy over EPA driving cycles, frontal area and mass show strong linear relationships with footprint. [EPA-HQ-OAR-2010-0799-9487-A1, p.85]

Weighting and Regression Analysis [EPA-HQ-OAR-2010-0799-9487-A1, p.86]

The Alliance also supports the weighting and regression analysis used to develop the 2017-2021 model year CAFE and GHG curves. We further support the derived relationships between the

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vehicles' CO₂/fuel consumption and their related footprints as an appropriate attribute. However, as mentioned elsewhere in our comments, these weightings and analysis should be reviewed during the midterm evaluation for the MY 2022-2025 model years. [EPA-HQ-OAR-2010-0799-9487-A1, p.86]

Organization: BMW of North America, LLC

BMW fully supports the continued use an attribute-based program. [EPA-HQ-OAR-2010-0799-9579-A1, p. 1]

With respect to a Single National Program, BMW fully supports the continued use an attribute-based program for passenger cars and light trucks as proposed by EPA and NHTSA. Compared to a uniform standard for passenger cars and light trucks, an attribute-based standard drives fuel efficiency and GHG reduction in all segments while taking into account the manufacturer's product portfolio. However, because BMW offers a worldwide product portfolio and most of the CO₂ and fuel economy regulations worldwide are based on vehicle weight instead of footprint, BMW continues to recommend that these regulations be harmonized as much as possible. [EPA-HQ-OAR-2010-0799-9579-A1, p. 3]

Organization: Consumer Federation of America (CFA)

The attribute-based approach ensures that the standards do not require radical changes in the types or size of vehicles consumers drive; so, the full range of choices will be available to consumers. [EPA-HQ-OAR-2010-0799-9419-A1, p. 8]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 90.]

Third, the approach to setting standards is consumer friendly and facilitates auto maker compliance.

The new attribute-based approach as you've heard provides no incentive to change the size of the vehicles. Consumers will get the cars they want; they'll all be more fuel efficient.

Organization: Consumer Reports

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 168.]

Because the CAFE standards are now footprint-based, improvements across all vehicle sizes, so each class will see an efficiency.

Organization: Ecology Center

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 188.]

One is that the proposed standards continue the attribute-based structure and requirements for steady improvement that were established in the current standards. When first proposed by the agencies in 2009 following the historic 2007 Energy Independence and Security Act, this new approach represented a breakthrough in regulation for this sector. Not only were the requirements more fairly applied among vehicle manufacturers but the rules also more effectively stimulated innovation by requiring improvements across all vehicle sizes and classes. The rules also included provisions that help ensure the continued production of domestic fuel-efficient vehicles, and we support those as well.

Organization: Ferrari

1) Vehicle attributes to be considered [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

We agree that the CO₂ and CAFE standards are based on one or more vehicle attributes. The footprint is the attribute selected first by NHTSA since 2011 MY CAFE regulation and then in the joint National Program MYs 2012-16 for both CO₂ and CAFE standards. [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

The footprint alone does not take into account many of a vehicles' other characteristics that greatly affect the fuel economy/ CO₂ emissions, like the engine displacement and power, transmission, curb weight, aerodynamics, etc. This fact is recognized by both EPA and NHTSA, as written in Section II.C.2. (pages 74912 and 74913): [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

There are several policy and technical reasons why NHTSA and EPA believe that footprint is the most appropriate attribute on which to base the standards, even though some other vehicle attributes (notably curb weight) are better correlated to fuel economy and emissions. [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

Further...we recognize that weight is better correlated with fuel economy and CO₂ emissions than is footprint. [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

We sent our comments on this important issue in the previous rulemaking for MYs 2012- 16. We would prefer at least a second attribute to be considered, in addition to the footprint. For example: the power to curb weight ratio. Nonetheless, we admit that it seems logical to continue with the footprint, as proposed, to be consistent with the final regulation enacted for MYs 2012-16. [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

We agree to keep the type and shape of curves that define CO₂ and fuel economy standards. [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

Organization: Ford Motor Company

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Ford supports the continuation of footprint-based standards with separate car and truck fleets based on NHTSA vehicle definitions for both the GHG and CAFE programs. [EPA-HQ-OAR-2010-0799-9463-A1, p. 8]

Ford and the auto industry have long supported separate car and truck attribute-based standards because cars and trucks have different functional characteristics, even if they have the same footprint and nearly the same base curb weights. For example, the Ford Edge and the Ford Taurus have the same footprint, but vastly different capabilities with respect to cargo space and towing capacity. Some of the key features incorporated on the Edge that enables the larger tow capability include an engine oil cooler, larger radiator and updated cooling fans. This is just one of the many examples that show the functional difference between cars and trucks and further support the need to maintain separate car and truck attribute-based standards. [EPA-HQ-OAR-2010-0799-9463-A1, p. 8]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 34.]

Turning now to more specific comments of the proposed rulemaking, we support the relative manner in which car and truck targets have been set to reflect their respective capabilities to improve fuel economy.

Organization: General Motors Company

GM supports the proposed footprint-based CO₂ and CAFE standards for 2017-2021. [EPA-HQ-OAR-2010-0799-9465-A1, p. 2]

Organization: Institute for Policy Integrity, New York University School of Law

The agencies should rethink their footprint-based standards, which may be unnecessary to respect consumer preferences, may negatively impact safety, and are likely to be overall inefficient. Increasing the safety of one car can impose a negative safety externality on others, and consumer preferences can adjust as average fleet-wide attributes shift. As a result, trying to eliminate the incentive to build smaller cars may block a cost-effective compliance strategy and may not guarantee a safer fleet. [EPA-HQ-OAR-2010-0799-9480-A1, p. 2]

Part II. Vehicle Attributes

The agencies assume that the current market accurately reflects the range of consumer preferences for vehicle attributes like performance, carrying capacity, safety, and comfort, failing only with respect to fuel economy technology. The agencies want to ensure that the proposed rule will preserve both consumer choice and the same mix of vehicle options. If instead the rule were to impact vehicle attributes like size and power, the agencies worry that consumers might experience a loss in welfare, erasing some of the large net benefits the rule should generate for consumers and society. [EPA-HQ-OAR-2010-0799-9480-A1, p. 12]

To this end, the agencies take two steps. First, they tie the prescribed standards to vehicle footprint, so that larger vehicles will generally be subject to less stringent controls compared to smaller vehicles. Second, the agencies apply an assumption of constant performance to their cost estimates, believing that manufacturers will spend whatever extra it costs to maintain current vehicle attributes as they increase fuel economy. [EPA-HQ-OAR-2010-0799-9480-A1, p. 12]

The agencies should rethink both their attribute-based standards and their estimation of costs. First, the footprint-based standards may be unnecessary to respect consumer preferences, may negatively impact safety, and may be overall inefficient. Several arguments call into question the footprint-based approach, but a particularly important one is that large vehicles can impose a negative safety externality on other drivers. [EPA-HQ-OAR-2010-0799-9480-A1, p. 12]

Second, the agencies' constant performance cost estimates represent an upper bound to possible consumer welfare losses and are most likely overestimates, because vehicle attributes are partly positional and consumer preferences can shift with changing attributes. Similarly, the unlikely chance that the agencies' cost projections underestimate consumer welfare losses is further mitigated by the actual nature of consumer preferences. Finally, those same insights from positional goods theory and the bandwagon effect should be considered in the agencies' forecast for the future consumer market for new technologies like electric vehicles. [EPA-HQ-OAR-2010-0799-9480-A1, p. 12]

Footprint-Based Standards May Be Unnecessary to Respect Consumer Preferences, May Negatively Impact Safety, and May Be Overall Inefficient

The agencies choose to set regulatory stringency according to vehicle footprint, in part because the statute requires NHTSA to base standards on attributes related to fuel economy. The agencies offer five justifications for choosing a footprint-based approach: [EPA-HQ-OAR-2010-0799-9480-A1, p. 13]

- First, they claim the optimal attribute-based standard will achieve greater overall fuel savings than the optimal flat standard, since an attribute-based approach encourages all manufacturers to add new technologies every year, even those manufacturers with fleets that are already relatively efficient.
- Second, out of concerns for safety, the agencies want to remove the incentive to build smaller cars in order to comply with the standard.
- Third, the agencies believe the attribute-based approach will be more equitable than a flat standard, which could impose disproportionate burdens on some manufacturers.
- Fourth, the agencies want to preserve the current vehicle mix in the marketplace in order to respect consumer choice.

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- Fifth, the agencies believe a footprint-based approach involves a lower risk of manufacturers “gaming” the system, at least compared to a weight-based approach. [EPA-HQ-OAR-2010-0799-9480-A1, p. 13]

All five justifications are problematic. [EPA-HQ-OAR-2010-0799-9480-A1, p. 13]

The first justification assumes that attribute-based approaches will increase overall fuel savings since, under a flat standard, manufacturers with fleets that are already relatively fuel efficient would have little incentive to continue upgrading. However, this claim very much depends on whether the proposed attribute-based standard is actually optimal: an inefficient footprint-based standard is unlikely to achieve greater overall fuel savings than the optimal flat standard. [EPA-HQ-OAR-2010-0799-9480-A1, p. 13]

Moreover, given that reducing vehicle size, weight, and performance are relatively cheap and readily available compliance options,⁸⁴ even the optimal footprint-based standard may suffer from inefficiencies by disincentivizing an otherwise cost-effective strategy. Wenzel’s research suggests that “a fuel economy standard that discourages vehicles with smaller footprint . . . will not be as effective in reducing fuel consumption and associated greenhouse gas emissions as a single stringent standard applied across all vehicle sizes. . . . A single stringent fuel economy standard would discourage the continued use of light trucks (with low fuel economy) as essentially substitutes for cars, and encourage greater use of lighter and smaller vehicles.”⁸⁵ [EPA-HQ-OAR-2010-0799-9480-A1, p. 13]

NHTSA should consider the advantages and disadvantages of all fuel economy-related attributes, and choose the attribute-based approach that will allow it to maximize net benefits of the rule; EPA should do the same with all possible approaches, including non-attribute, flat standards. One fuel economy-related attribute the agencies do not seem to have considered that may warrant analysis is vehicle fuel type. [EPA-HQ-OAR-2010-0799-9480-A1, p. 13]

The second justification offered is that a footprint-based approach will avoid negative safety impacts. To start, the footprint-based approach does not completely eliminate the incentive to build smaller cars to comply with the rule. The mathematical formulas that set the standards are only strictly increasing along the range from 40 square feet to either 55 square feet for cars or 75 square feet for trucks; at other points, the curve is flat. Admittedly, that central range covers most vehicle models.⁸⁸ However, at least several dozen models (mostly subcompacts and sports cars) fall in the 30-40 square feet range,⁸⁹ which are all subject to the same standards. At a minimum, the manufacturers of these models may have an incentive to decrease footprints as a compliance strategy, since doing so would not trigger more stringent standards. [EPA-HQ-OAR-2010-0799-9480-A1, p. 14]

Manufacturers could also decrease weight without decreasing footprint as a compliance strategy. The overall effects of such a choice on safety are not immediately clear, though at least some evidence suggests that redesigning truck-based SUVs into car-based crossover SUVs resulted in both lighter vehicles and decreased safety risks to drivers and others.⁹¹ [EPA-HQ-OAR-2010-0799-9480-A1, p. 14]

More importantly, the relationship between size and safety is neither simple nor unidirectional. To the extent smaller cars fare worse in crashes with bigger cars, increasing size may improve an individual driver's safety; but it may simultaneously impose a negative safety externality on other drivers, whose cars are now relatively smaller compared to the growing average fleet size. Decreasing size may have similarly opposing impacts on safety. Therefore, maintaining or increasing the average size of the entire fleet does not guarantee the safest outcome, and decreasing the fleet's average size in response to a fuel economy rule might have no overall change in safety levels (though at some point, reducing the size or changing attributes could affect the vehicle's intrinsic safety, as distinct from its relative safety). As Wenzel, a leading researcher on this subject, has explained, "a fuel economy standard that discourages vehicles with smaller footprint, or lower weight, will not necessarily reduce casualties. . . .Details of vehicle design, which can be improved through direct safety regulations, will have a greater effect on occupant safety than fuel economy standards that are structured to maintain vehicle size or weight."⁹² [This comment can also be found in section 13.1 of this comment summary.] [EPA-HQ-OAR-2010-0799-9480-A1, p. 14]

The third justification put forward is that a flat standard would inequitably affect some manufacturers more. However, to the extent that the fuel economy program can incorporate a trading scheme for compliance credits, the market would help smooth out any disproportionate impacts on certain manufacturers. Additionally, trading will ensure that manufacturers with relatively efficient fleets still have an incentive to continue improving fuel economy (in order to generate credits), which will further mitigate the agencies' first concern, mentioned above. [EPA-HQ-OAR-2010-0799-9480-A1, p. 14]

The fourth justification states that the agencies need to preserve the current vehicle mix in order to respect consumer choice. The agencies do not, however, adequately explain why maintaining the current vehicle mix is necessary to protect consumer welfare. The negative safety externality generated by larger vehicles indicates that the vehicle fleet may, on average, be too big; furthermore, some vehicle downsizing may represent a cost-effective method for compliance and have little impact on consumer welfare (as explained below).⁹⁴ Preserving the current vehicle mix is therefore not necessary to protect consumer welfare, and there is no reason to preserve the current mix as an end unto itself. [EPA-HQ-OAR-2010-0799-9480-A1, pp. 14-15]

The fifth justification sees a footprint-based standard as a way to discourage "gaming" behavior, especially compared to a weight-based standard. A weight-based standard may be easier to game than a footprint-based standard, but that does not mean that manufacturers will not still game the proposed regulation in ways that reduce overall efficiency. In fact, it seems the footprint-based standard creates an incentive to expand vehicle size in order to relax the applicable standard. Given that automobile manufacturers already respond to very fine-tuned tax incentives for fuel economy,⁹⁵ it certainly seems possible that the proposed rule will encourage some gaming of the average footprint. [EPA-HQ-OAR-2010-0799-9480-A1, p. 15]

NHTSA should remember that footprint and weight are not the only possible fuel economy-related attributes on which to base policy. For example, it might be much harder for manufacturers to game either a much flatter attribute-based standard or a standard differentiated

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by vehicle fuel type. EPA should assess whether a different approach, including a non-attribute, flat standard, might be the best at discouraging gaming. [EPA-HQ-OAR-2010-0799-9480-A1, p. 15]

In conclusion, a footprint-based standard may be unnecessary to respect consumer preferences, and may interfere with downsizing that could be, on the whole, consumer-welfare enhancing; it may have negative impacts on safety, given the negative safety externality that relative size can generate; and it may simply be inefficient compared to a more optimal, flatter standard. The agencies should seriously rethink whether the footprint-based approach is the best option. [EPA-HQ-OAR-2010-0799-9480-A1, p. 15]

If the agencies do go forward with a footprint-based approach, they should study its effects carefully and revisit the matter when more evidence is available. The first footprint-based fuel economy standards took effect with model year 2012.⁹⁶ The agencies therefore now have an opportunity to begin analyzing how the attribute-based standards influence manufacturers' production decisions. The agencies should consider whether the results of such a study challenge the footprint-based approach, at least during the planned mid-term evaluation, if not sooner. [EPA-HQ-OAR-2010-0799-9480-A1, p. 15]

The agencies should rethink their footprint-based standards, which may be unnecessary to respect consumer preferences, may negatively impact safety, and may be overall inefficient. Increasing the safety of one car can impose a negative safety externality on others, and consumer preferences can adjust as average fleet-wide attributes shift. As a result, trying to eliminate the incentive to build smaller cars may block a cost-effective compliance strategy and may not guarantee a safer fleet. [EPA-HQ-OAR-2010-0799-9480-A1, p. 20]

84 See generally Christopher R. Knittel, *Automobiles on Steroids: Product Attribute Trade-Offs and Technological Progress in the Automobile Sector* (U.C. Davis Inst. of Transportation Studies UCD-ITS-RR-09-16, 2009).

85 Tom Wenzel, *Analysis of the Relationship Between Vehicle Weight/Size and Safety, and Implications for Federal Fuel Economy Regulation*, at 43 (Report for the U.S. Dep't of Energy, Lawrence Berkeley National Laboratory Paper LBNL-3143E, 2010).

88 Wenzel, *supra* note 85, at 7.

89 *Id.* A very few luxury car models have footprints in the 55-80 square feet range, which also have flat standards.

91 Wenzel, *supra* note 85, at 43.

92 *Id.*

94 See *infra* note 99, and accompanying text.

95 James Sallee & Joel Slemrod, *Car Notches: Strategic Automaker Responses to Fuel Economy Policy* (NBER Working Paper No. 16604, 2010). Also see attached symposium paper on the energy paradox, at 11-12.

96 Proposed Rule, *supra* note 5, at 74,912.

Organization: Insurance Institute for Highway Safety (IIHS)

NHTSA has again proposed using vehicle footprint as the measure for varying CAFE requirements, and IIHS agrees that this will reduce the incentive for automakers to downweight or downsize vehicles to improve fuel economy. IIHS does have some concern regarding the “breakpoint” of the fuel economy curve at the lower extreme where footprint is the smallest (see Figure I-1 on page 74871 of the notice). This “breakpoint” is the leveling-off point on the fuel economy curve where the fuel economy requirement ceases to increase as footprint decreases. Moving this breakpoint farther to the left so that even smaller vehicles have increasing fuel economy requirements would reduce the chance that manufacturers would downsize the lightest vehicles for further fuel economy credits. [NHTSA-2010-0131-0222-A1, p. 1]

Organization: International Council on Clean Transportation (ICCT)

17. Separate footprint curves for cars and light trucks distort the requirements by making it easier for vehicle classified as light trucks to comply. Unlike the 2012/2016 requirements, the 2017-2025 rule increased the gap between cars and light trucks, providing stronger incentives for manufacturers to reclassify cars as light trucks and potentially undermining the benefits of the rule. A single footprint function would still give larger trucks a less stringent target to meet, while avoiding vehicle classification games. [EPA-HQ-OAR-2010-0799-9512-A1, p. 4]

17) Footprint Curves

We commend EPA and NHTSA for continuing to use a footprint-based adjustment to the CAFE standards instead of weight-based adjustments. Footprint-based adjustments fully encourage manufacturers to introduce lightweight materials, which can improve vehicle efficiency by 20% or more in the long run. Lightweight materials also extend the electric drive range of fuel cell and plug-in vehicles by a similar amount. This is one area of policymaking where the U.S. is ahead of the rest of the world. Japan, Europe, and China have all adopted standards with weight-based adjustments that effectively discourage the use of lightweight materials. [EPA-HQ-OAR-2010-0799-9512-A1, p. 48]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 197.]

The separate footprint curve to cars and light trucks also distort the requirements by making it easier for vehicles classified as light trucks to comply. A single footprint function would still give larger trucks a less stringent target to meet while avoiding vehicle classification games.

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Organization: Mercedes-Benz USA, LLC

DAG also supports the overall structure of the attribute-based program and the provisions for transferring and trading credits. [This comment can also be found in section 10.1.2 of this comment summary.] [EPA-HQ-OAR-2010-0799-9483-A1, p. 2]

Organization: National Automobile Dealers Association (NADA)

All things being equal, NADA supports a final rule that provides vehicle manufacturers with the greatest degree of compliance flexibility. In most instances, compliance flexibilities are nothing more than accommodations designed to recognize, harness, and leverage consumer demand. Perhaps the best example of a well-designed compliance flexibility is the attribute based framework, which recognizes that the motoring public demands a range of light-duty vehicle types to meet their needs and desires. By preserving access to an essential mix of cars and trucks, the proposal leverages consumer demand to facilitate continuous improvements across all vehicle types, regardless of product mix. Moreover, when fuel economy standards are set properly, under the direction enacted by Congress, the incentive to downsize or down-weight is reduced, helping to preserve passenger safety. [EPA-HQ-OAR-2010-0799-9575-A1, p. 11]

These comments do not devote much attention to technological feasibility, largely taking on faith the proposal's assumptions in that regard. Likewise, little attention is paid to the proposal's assumptions regarding program benefits, except to stress that if and to the extent vehicles covered by the program rule are not sold and used as predicted, those benefits will be reduced. [EPA-HQ-OAR-2010-0799-9575-A1, p. 3]

The proposal seeks to establish CAFE and GHG mandates which would take effect with MY 2017. No statutory mandate requires that standards be set so far in advance, for so long a period of time. In fact, the 35.5 mpg standard recently promulgated for MY 2016 will kick in some four years earlier than Congress contemplated in EISA. [EPA-HQ-OAR-2010-0799-9575-A1, p. 11]

Absent a specific statutory direction, NHTSA and EPA should be guided by three principal factors. First, a timetable should be designed to provide adequate lead-time for manufacturers to achieve technologically feasible standards. Statutory language on lead-time is found in both the Energy Policy and Conservation Act and the Clean Air Act. CAFE standards must be issued at least 18 months prior to the model year in question and for no more than 5 model years. In addition, new GHG standards may not take effect sooner than the model year commencing 4 years after they are promulgated. Technological feasibility directly relates to what manufacturers can do and when they can do it. The longer out into the future standards are set, the less likely NHTSA and EPA will have credible information to accurately predict technological feasibility. This is one of the key lessons taught by the heavy-duty truck emissions look-back discussed above and found in Exhibit B. Setting standards too far in advance dramatically increases the risk that those standards will prove to be technologically infeasible. [EPA-HQ-OAR-2010-0799-9575-A1, p. 11]

Proposed standards also must be economically practicable. Although NADA has considerable confidence that vehicle manufacturers will be able to research, design, manufacture, and

incorporate technologies and designs aimed to meet the proposed standards, serious questions exist regarding whether they will be able to do so in a cost effective or economically practicable manner. As discussed at length above, regulatory benefits will not attain unless and until vehicles subject to the proposal are bought. And, to the extent they prove unaffordable, they will not be bought. There are simply too many variables involved with the reasonable modeling of economic practicability to warrant the setting of standards unnecessarily too far in advance. Fuel costs, materials costs, general economic conditions, and interest rates are but a few of these very hard to forecast, yet critical variables. In short, NHTSA and EPA have no justification for setting standards for longer than the statutory five year period. [EPA-HQ-OAR-2010-0799-9575-A1, pp. 11-12]

Prospective light-duty vehicle purchasers, and the dealers who sell to them, will be directly impacted by the vehicle production mandates under consideration. If no rule were to issue, in-use passenger car and light truck fuel economy and GHG performance would continue to improve, as older, less fuel-efficient vehicles are replaced by newer ones offering comparable performance with improved fuel economy. NHTSA and EPA must preserve this trend by avoiding mandates which, through product compromises or high costs, would impede fleet turnover. [EPA-HQ-OAR-2010-0799-9575-A1, p. 13]

The automobile industry has traveled a steep technology path over the last century, resulting in astounding improvements to light-duty cars and trucks. Today's vehicles are lighter and more powerful, yet safer and more fuel efficient than ever in history. Fuel economy/GHG standards should encourage manufacturers to continue along this technology path, but only if it allows them to deliver to new vehicle showrooms products that are acceptable by and affordable to consumers. Future light-duty vehicles must be affordable up-front, and must also offer a total value package that includes fuel economy, but with no safety or performance trade-offs. Unless and until new vehicles sell, regulatory benefits will be unrealized. [EPA-HQ-OAR-2010-0799-9575-A1, p. 13]

Organization: Society of the Plastics Industry, Inc. (SPI)

SPI also supports the agencies' choice to incentivize the use of advanced lightweight materials and structures versus reductions in vehicle size by adopting a "footprint" approach to emission reductions. Composite throttle valve housing can be 30 percent lighter than its metal equivalent, and high precision engineering is producing replacements for metal parts. Body panels and bumpers made of plastic composites that perform comparably to those made of metal can be as much as 50 percent lighter, contributing to both greater fuel efficiency and safety by lowering the vehicle's center of gravity. And while approximately eight percent of the total vehicle weight of the average U.S. light vehicle is plastics and composites, a minimum of 30 percent (by weight; in one or more subsystems beyond interior trim) is achievable. [EPA-HQ-OAR-2010-0799-9492-A1, p.4]

Organization: United Automobile Workers (UAW)

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Second, the UAW believes that the agencies made reasonable determinations regarding the shape and slope of the curves that describe the proposed requirement for any particular size vehicle. [EPA-HQ-OAR-2010-0799-9563-A2, p.2]

Organization: Whitefoot, K. and Skerlos, S.

Our recent analysis (attached) suggests that manufacturers likely have a profitable incentive to upsize their vehicle fleets in response to the footprint-based standards, through a combination of adjusting prices to shift production to larger vehicles and increasing vehicle footprint during redesign. [See the attachment in Docket number EPA-HQ-OAR-2010-0799-9447-A2] [EPA-HQ-OAR-2010-0799-9447-A1, p. 1]

NHTSA and EPA should develop a model to analyze profitable incentives to upsize the vehicle fleet in response to the footprint-based standards. [EPA-HQ-OAR-2010-0799-9447-A1, p. 1]

Response:

2.2. Stringency of Standards

2.2.1. Overall Stringency

Organizations Included in this Section

Alexandria Hyundai
 Alliance of Automobile Manufacturers
 American Chemistry Council (ACC)
 American Council for an Energy-Efficient Economy (ACEEE)
 Anonymous public citizen 2
 Anonymous public citizen 3
 Anonymous public citizen 5
 Association of Global Automakers, Inc. (Global Automakers)
 Bassett, S.
 BMW of North America, LLC
 California Air Resources Board (CARB)
 Capozzelli, J.
 Center for Biological Diversity
 Chrysler Group LLC
 Consumer Federation of America (CFA)
 Consumer Reports
 Consumers Union
 Ecology Center
 Environmental Consultants of Michigan
 Ferrari
 Ford Motor Company
 General Motors Company

Growth Energy
 Haroldson, C.
 Honeywell International, Inc.
 Honeywell Transportation Systems
 Howard, P.
 Hrin, S.
 Hyundai America Technical Center
 International Council on Clean Transportation (ICCT)
 Jackson, F.W.
 Manufacturers of Emission Controls Association (MECA)
 Marlinghaus, E.
 Marshall, C.
 Mass Comment Campaign (10) (National Wildlife Federation Action Fund-1)
 Mass Comment Campaign (4,505) (Unknown Organization)
 Mass Comment Campaign (61) (The Social Justice Group)
 Massachusetts Institute of Technology (MIT)
 Mercedes-Benz USA, LLC
 Miller, P.
 National Association of Clean Air Agencies (NACAA)
 National Automobile Dealers Association (NADA)
 National Wildlife Federation (NWF)
 Northeast States for Coordinated Air Use Management (NESCAUM)
 Plant Oil Powered Diesel Fuel Systems, Inc.
 RVIA
 Smith, Frank Houston
 Society of the Plastics Industry, Inc. (SPI)
 Susan R.
 Tarazevich, Yegor
 Toyota Motor North America
 Union of Concerned Scientists (UCS)
 United Automobile Workers (UAW)
 Van Coppenolle, J. and L.
 Volkswagen Group of America
 Volvo Car Corporation (VCC)
 Whitefoot, K. and Skerlos, S.

Organization: Alexandria Hyundai

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 66.]

The 54.5 MPG target for 2025 represents a significant advance from where we are as an industry today.

Organization: Alliance of Automobile Manufacturers

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The agencies should assure equivalent program stringency. The proposed EPA and NHTSA requirements are coordinated, but not fully harmonized. The Alliance believes that adjustments to the NHTSA program are needed to ensure that it properly harmonizes with the EPA requirements under the differing statutory authorities provided to the agencies. [EPA-HQ-OAR-2010-0799-9487-A1, p.4]

Adjusting for Year-Over-Year Stringency [EPA-HQ-OAR-2010-0799-9487-A1, p.86]

The NPRM describes the methodology for adjusting standard curves for year-over-year stringency increases, noting that for the MY 2017-2025 rules, the curves are adjusted on a relative basis (applying the same percentage reductions in a given year across the entire footprint range). This method is in contrast to the methodology used in the MY 2012-2016 rules, where curves were adjusted on an absolute basis (applying the same absolute gram per mile and fuel consumption reductions in a given year across the entire footprint range). The agencies request comment on their conclusions and invite further recommendations for other means to adjust the standard curves for year over year stringency increases. [EPA-HQ-OAR-2010-0799-9487-A1, p.86]

Given that many of our member companies support the standards as proposed, the Alliance declines to make comments on specific changes. However, we believe that the agencies should examine their approach to adjusting the curves for year-over-year stringency as part of the mid-term evaluation to determine if actual improvements made in the 2012-2016 model year period suggest a declining correlation between the footprint attribute and vehicle emissions/fuel consumption (supporting adjustments on a relative basis) or whether the correlation remains roughly the same as observed in the 2008 model year fleet (supporting adjustments on an absolute basis). [EPA-HQ-OAR-2010-0799-9487-A1, p.86]

Organization: American Chemistry Council (ACC)

We do not comment on the CAFE levels proposed except to reaffirm that the levels proposed by the agencies are technologically feasible and economically practicable as a matter of statute. [EPA-HQ-OAR-2010-0799-9517-A1, p. 2]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 264.]

We support the specific fuel efficiency goals and time limits proposed in the standard.

Organization: American Council for an Energy-Efficient Economy (ACEEE)

Overall Stringency of Standards

The agencies propose target curves for the standards obtained by adjusting the curves discussed in the previous section. We support the agencies' decision to shift the target curves vertically by application of fixed percentages rather than by simply translating them up or down, as was done previously (Joint TSD 2-51). The new approach is clearly more consistent with the objective of

preserving the relationships among stringencies of the targets across footprints. [EPA-HQ-OAR-2010-0799-9528-A2, p.7]

We do, however, have concerns about the agencies' choice of curves among all the curves generated in this way. Section III.D.6 of the NPRM discusses the alternatives considered by EPA, a total of four in addition to the proposal and a reference case. Each of the four considers a standard for either cars or trucks that is 20 gpm more or less stringent than the proposed standards. All four alternatives, in addition to the proposed standards, are found to be achievable, except by a single, small-volume manufacturer (Ferrari). Based on this result, it is unclear why one of the more stringent alternatives, e.g. Alternative 2, or another more stringent standard, would not be superior to the proposed standard. EPA shows that Alternative 2 would cost about \$500 more per vehicle, but does not make the case that Alternative 2 is not cost-effective. The crux of EPA's lengthy argument that it has chosen the best standard seems to be that more stringent alternatives such as Alternative 2 call for a substantially greater penetration of advanced technologies, particularly hybrids but also including EVs and PHEVs. These alternatives adhere to technology penetration rates that fall within the caps set by EPA to ensure feasibility, however. Within those parameters, it seems reasonable that an alternative demanding higher penetration rates for advanced technologies is preferable, especially given that promoting the development of advanced technologies is among the objectives of the rule. [EPA-HQ-OAR-2010-0799-9528-A2, pp.7-8]

The concluding argument regarding the superiority of the proposed standard (NPRM p.75084) is not compelling, and Table III-53 begs the question of how the compliance cost differential between cars and trucks in 2017-2020 can be justified. This concern would presumably be amplified by further disaggregation, showing that in fact incremental costs for large trucks are negligible in those years. The proposal appears to favor (in the near term) manufacturers with disproportionate production of large trucks during those years. EPA should show compliance costs by manufacturer, not just for 2021 and 2025, but for all years. The small improvements required of large trucks in 2017-2020, followed by a larger improvement in 2021 is of particular concern given the agencies' plan to conduct a midterm evaluation. This situation raises the possibility that the more significant improvements proposed for large trucks in the period 2021-2025 will never be realized, because manufacturers may allow technology development for these vehicles to stagnate in the early years of the rule and use this to influence the outcome of the midterm evaluation. [EPA-HQ-OAR-2010-0799-9528-A2, p.8]

The argument for the superiority of the proposed standards is all the weaker in view of the fact that EPA did not take into account the various flexibilities that have been proposed, such as credits for plug-in vehicles and hybrid credits for large pickups. We also note that the projected percentage of hybrids purchased in 2025 (15 percent, NPRM p.75061) is at the low end of the penetration suggested in the NOI (3-14 percent in the 4 percent per year scenario, 25-65 percent in the 5 percent per year scenario), once again raising the question of whether the proposed standards are the maximum achievable. [EPA-HQ-OAR-2010-0799-9528-A2, p.8]

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Recommendations Reconsider whether alternative standards such as Alternative 2 that deliver greater benefits than the proposed standards are achievable and cost-effective. Show compliance costs by manufacturer for all years in the NPRM. [EPA-HQ-OAR-2010-0799-9528-A2, p.8]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 109.]

We concur with the agencies' assessment that in order to thrive in the global automotive market, domestic manufacturers will need to invest consistently in technologies to improve fuel efficiency. We believe that the standards now proposed can help achieve that outcome. And in our testimony, we make three points:

Organization: Anonymous public citizen 2

The most obvious and most simple is not to use more corn gasoline, but to double the efficiency of vehicles. Lead consumers to purchase smaller cars and trucks. To see what the auto makers have done just take a look at pickup trucks. They have discontinued smaller trucks and cars. Each year they are just a little bigger. [EPA-HQ-OAR-2010-0799-1359, p.1]

Instead of giving subsidies to grow alternative fuels, lets give incentives to have consumers smaller vehicles. [EPA-HQ-OAR-2010-0799-1359, p.1]

We also need to develop more efficient vehicles. But reducing the vehicle mass would result in less fuel being used. [EPA-HQ-OAR-2010-0799-1359, p.1]

Organization: Anonymous public citizen 3

Increase the goal from 54.5 mpg to 100 mpg. It's time to lead. [EPA-HQ-OAR-2010-0799-2001, p.1]

Organization: Anonymous public citizen 5

The Proposed Legislation is not founded on any sound scientific conclusions. The affects of basing legislation on technology that does not exist is irresponsible and irrational. Instead of punishing the consumer by forcing pseudoscience based laws onto the manufacturers, why don't you create incentives for innovation? [EPA-HQ-OAR-2010-0799-2010, p.1]

Organization: Association of Global Automakers, Inc. (Global Automakers)

The standards proposed by the agencies are extremely stringent and are based on a large number of assumptions about technology and the auto market over the next decade. By extending the standards for many years into the future, the agencies provide manufacturers with substantial lead-time, which is of great value in compliance planning. On the other hand, the long time frame means that standards in the later years will be based on relatively long-range projections and assumptions. [EPA-HQ-OAR-2010-0799-9466-A1, p. 1]

[These comments were also submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 65-66.]

[These comments were also submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 50.]

Organization: Bassett, S.

Also a true 54.5 MPG is unrealistic. Have you people never heard of the laws of physics? It will take x amount of energy (regardless of fuel type) to move a weight (auto) a distance of x. [EPA-HQ-OAR-2010-0799-8123-A1, p. 1]

Organization: BMW of North America, LLC.

The framework for model years 2017-2025 sets very ambitious GHG and fuel economy standards which can only be achieved through the adoption of all proposed compliance flexibilities. [EPA-HQ-OAR-2010-0799-9579-A1, p. 1]

Compliance will also require significant automaker efforts to reduce vehicle emissions coupled with public policy measures for steering market demand towards more fuel efficient vehicles. This is particularly true for E-mobility where customer acceptance and future growth in demand will depend largely on vehicle affordability, measures to address range concerns, and infrastructure availability for public recharging. Significant market penetration of electric vehicles, especially in the latter years, is needed to ensure automakers' compliance with these proposed standards covering MYs 2017 through 2025. [EPA-HQ-OAR-2010-0799-9579-A1, p. 2]

As a premium manufacturer, BMW designs and builds vehicles with outstanding product characteristics in order to satisfy higher customer expectations compared to other manufacturers, yet with similar vehicle footprints. Consequently, our product and specific US premium vehicle market characteristics require increased levels of technology in order to meet future standards compared to other manufacturers. Many of the technologies mentioned in the draft joint Technical Support Document have already been implemented in BMW Group models. Therefore, the significant penetration of these advanced conventional technologies in our existing fleet will make it even more challenging for BMW to achieve compliance with these very stringent standards. [EPA-HQ-OAR-2010-0799-9579-A1, pp. 3-4]

Organization: California Air Resources Board (CARB)

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 10-12]

As you know, at the President's request, CARB participated in the development of the greenhouse gas standards that you are considering today. We shared our knowledge developing the nation's first greenhouse gas standards which were adopted back in 2004 and became

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effective in California and 10 other states with the 2009 models. We contributed to new studies that form some of the technical underpinnings of the EPA proposal and co-authored with the federal agencies the Technical Assessment Report that was issued in late 2010. We continue to work with the federal agencies to ensure that the proposed EPA greenhouse gas standards could be used as an alternative to California's standards and result in a unified set of regulations that would allow vehicle manufacturers to produce a single vehicle model that would meet state and federal greenhouse gases and federal fuel economy standards. We believe your proposal is consistent with these objectives.

Our proposed greenhouse gas standards are nearly identical to what you are proposing. Our analysis of the costs and benefits draws from the many hours of discussion we had with your staff on the best information and the latest analytical techniques to use in our respective regulatory documents.

For this to become a reality, EPA needs to finalize its standards largely as currently proposed.

Organization: Capozzelli, J.

However, the proposed rules are not strong enough. They contain a dangerous loophole that lets SUVs improve gas-mileage standards later than passenger vehicles. This will spur production of even more SUVs, and the auto industry is attempting to weaken these already-inadequate standards. Increasing the fuel efficiency of our vehicles is essential in the battle against dangerous climate change. [NHTSA-2010-0131-0221-A1, p.1]

These standards leave the United States behind Europe, Japan and China in fuel efficiency. In the long run, higher standards will benefit both American consumers and manufacturers by pushing innovation instead of stagnation. [NHTSA-2010-0131-0221-A1, p.1]

These rules can and should be significantly strengthened. [NHTSA-2010-0131-0221-A1, p.1]

All but one of the alternative standards discussed in the rule's would allow greenhouse gas emissions from cars and light trucks to increase through 2025; but dangerous climate change cannot be avoided unless greenhouse gases actually, decrease. The rules should adopt the alternative that actually decreases carbon pollution every year through 2025. [NHTSA-2010-0131-0221-A1, p.1]

Organization: Center for Biological Diversity

The Center supports the Agencies' efforts to limit greenhouse gas pollution from new passenger vehicles and light trucks, and we appreciate efforts the Agencies have made to respond to our comments to earlier CAFE and vehicle greenhouse gas rulemakings. But as we point out below, the current NPRM contains a number of significant flaws. We request that the Agencies remedy them to bring the forthcoming final MY 2017-2025 vehicle and greenhouse gas rulemaking into compliance with the Energy Policy and Conservation Act ("EPCA"), as amended by the Energy Independence and Security Act of 2007 ("EISA"), and the Clean Air Act ("CAA"). [EPA-HQ-OAR-2010-0799-9479-A1, p. 2]

The importance of achieving maximum feasible fuel efficiency, along with maximum feasible greenhouse gas reductions, in the 14 years between now and the end of 2025 cannot be overstated. As the Agencies themselves observe, “DOE has stated that vehicle efficiency has the greatest short-to mid-term impact on oil consumption.”¹ Further, “20% of total U.S. CO₂ emissions come from passenger cars and light trucks,” a total that amounts to 4% of global emissions. But the CAFE rules issued by the Agencies over the years, and therefore their effect on reducing greenhouse gas emissions, has failed to make inroads on the problem: “Passenger cars and light trucks . . . account for more than half of U.S. transportation CO₂ emissions, and CO₂ emissions from these vehicles have increased by 17 percent since 1990.” The alternative the Agencies prefer would continue to increase greenhouse gas emissions through 2025. The Agencies should, for the first time in their history, reverse this trend and promulgate a rulemaking that reduces rather than increases greenhouse gas emissions. [EPA-HQ-OAR-2010-0799-9479-A1, p. 2]

The targets adopted by the Agencies as the “preferred alternative” do not achieve emissions reductions, and do not constitute the maximum feasible fuel efficiency level under EPCA/EISA, nor protect the public health and welfare with an adequate margin of safety under the CAA. The “preferred” alternative would arrive at what is described in the NPRM as the “equivalent” of 54.5 mpg in 2025. This number, when expressed without adequate explanation, is misleading. In fact, when not inflated by air conditioning credits that lower greenhouse gas emissions but do nothing to increase fuel efficiency, the number is 49.6 mpg – though even that number signifies only the “estimated average required fleet-wide fuel economy”; once carmakers’ use of various “flexibilities” and credits are accounted for, the estimated average “achieved” mileage drops to just 46.7 mpg. The actual real-world fleet-wide fuel efficiency number is even lower, translating to no more than approximately just 40 mpg (and 223 grams per mile). Because fuel efficiency itself, regardless of how it is counted, never exceeds 49.6 mpg, it is simply incorrect to claim a fuel efficiency “equivalent to” 54.5 mpg, and we urge the Agencies to clarify the effects of the rulemaking without referring to the highly ambiguous concept of equivalency. Equivalency relates to calculations of greenhouse gas emissions but in no way to mileage standards, a distinction certain to escape the average reader. But whether stated as 46.7 mpg or 49.6 mpg, the target is insufficient. [EPA-HQ-OAR-2010-0799-9479-A1, pp. 2-3]

The failure to implement maximum feasible mileage standards through the next 14 years – a period exceeding the years between 2010 and 2020 that have been named the “critical decade” because of their unparalleled importance in the effort to avoid the most drastic effects of climate change – would not only be in violation of Congressional mandates, but would also constitute a regulatory failure of potentially irremediable proportions. Only Alternative 4 actually reduces greenhouse gas emissions. Adopting any other alternative will also continue to leave the U.S. far behind its competitors in the global automotive market. The preferred alternative is far from what is both technically and economically feasible to reduce the nation’s dependence on foreign oil. [EPA-HQ-OAR-2010-0799-9479-A1, p. 3]

Below we point out the various deficiencies inherent in the rulemaking. Among the most egregious is the laundry list of near-exemptions, credits, and other give-aways that would be provided to the largest and least efficient vehicles covered by the rulemaking: the SUVs, pickup

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trucks and other “light trucks” that have constituted the most profitable vehicle class, and that have proliferated on America’s highways while stymieing real progress on fuel efficiency for decades. Yet, this rulemaking would reintroduce the SUV loophole with a vengeance. We encourage the Agencies to address these deficiencies, abandon the preferred alternative and instead drive industry to use the next 14 years to overhaul, rather than merely tinker with, vehicle technology and achieve the results the statutes demand. [EPA-HQ-OAR-2010-0799-9479-A1, p. 3]

1. The Agencies must set fuel efficiency standards that achieve maximum fuel efficiency and energy conservation

The Agencies’ discussion of the factors that must be considered in setting CAFE standards – and, more importantly, the manner in which the Agencies weigh them – must be corrected in a number of ways. While noting in passing that they cannot undermine energy conservation, the Agencies nonetheless list energy conservation merely as one among many factors to consider, failing to discern that it is the overriding purpose of the statutes. That energy conservation has been ignored or, at a minimum, arbitrarily relegated to secondary or tertiary importance, is evident from the following statement: [EPA-HQ-OAR-2010-0799-9479-A1, p. 4]

While the GHG emissions targets do become more stringent each year, the emissions targets have been selected to allow compliance by vehicles of all sizes and with current levels of vehicle attributes such as utility, size, safety, and performance. Accordingly, these proposed standards are projected to allow consumers to choose from the same mix of vehicles that are currently in the marketplace. [EPA-HQ-OAR-2010-0799-9479-A1, p. 4]

In other words, the Agencies have selected standards that value purported consumer choice and the continued production of every vehicle in its current form over the need to conserve energy: as soon as increased fuel efficiency begins to affect any attribute of any existing vehicle, stringency increases cease. That is clearly impermissible and contrary to Congressional purpose.¹⁷ Given this outcome, it is not surprising that, as has been widely reported, the NPRM is the result of an “agreement” between the Agencies and the regulated industries – something that, at a minimum, taints the objectivity of the rulemaking process but instead is touted as an accomplishment.¹⁸ Protecting “the same mix of vehicles currently on the market” or the “current levels of vehicle attributes” is decidedly not the Agencies’ task. [EPA-HQ-OAR-2010-0799-9479-A1, p. 4]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 215-216.]

Secondly, all but one of the alternative standards discussed in the rules would allow overall greenhouse gas emissions from cars and light trucks to increase in 2025. And given the climate crisis, we don't believe we can afford this, and so we would look at pushing for fuel efficiency standards in the range of 60 miles per gallon rather than 54, which is the current proposal, and real world looks more like something like 49.

1 Draft Environmental Impact Statement for Corporate Average Fuel Economy (“CAFE”) Standards, Passenger Cars and Light Truck Model Years 2017-2025 (“DEIS”) at S-7. [EPA-HQ-OAR-2010-0799-9479-A1, p. 2]

17 CBD v. NHTSA, 538 F.3d at 1195. [EPA-HQ-OAR-2010-0799-9479-A1, p. 4]

18 See, e.g., Jason Plautz, Fuel Economy: Cost Concerns Still Dog Newly Released CAFE Standards, GREENWIRE, Nov. 4 2011. [EPA-HQ-OAR-2010-0799-9479-A1, p. 4]

Organization: Chrysler Group LLC

The challenge of meeting the proposed 2025 MY standards must not be underestimated. We believe it’s important to observe that reaching the projected overall average of 163 grams per mile of carbon dioxide will require manufacturers to make unprecedented reductions in light-duty vehicle greenhouse gas emissions and fuel consumption following the large improvements which will be necessary in the 2012-2016 model years. Market acceptance of the technologies required (and costs incurred) to meet these standards will be a critical factor in the success of the 2017-2025 MY National Program; customer choice and uptake will ultimately determine the success of this program. [EPA-HQ-OAR-2010-0799-9495-A1, p. 1]

The proposed 2017-2025 standards are very aggressive. Manufacturers are only beginning their compliance with the 2012-2016 National Program, which will drive a 24% improvement over the 2008 MY baseline to achieve the 2016 MY standard. The proposed standards for 2017-2025 model years continue this unprecedented rate of improvement, driving an additional 35% improvement over roughly two product cycles. These improvements will be made possible, in part, through flexibilities such the recognition of air conditioning and off-cycle improvements and incentive programs such as the “game-changing” pickup truck incentives and advanced technology vehicle multipliers for electric, plug-in hybrid electric and CNG vehicles. [EPA-HQ-OAR-2010-0799-9495-A1, p. 5]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 51-52.]

The challenge of meeting the proposed standards must not be underestimated. We believe it's important to observe that reaching the projected overall average of 163 grams per mile of carbon dioxide in model year 2025 will have to be achieved within 13 years or approximately two product cycles.

[This comment was also submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 24.]

The proposed 2017-2025 National Program reaches thirteen years into the future. Setting standards this far into the future provides long-term fuel economy and greenhouse gas goals to automotive manufacturers and suppliers enabling strategic planning for the needed improvements. However, this lead-time comes at the cost of less certain estimates for technology

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development, cost, and customer acceptance and demand. [EPA-HQ-OAR-2010-0799-9495-A1, p. 5]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 58.]

We believe it is important to observe that reaching the projected overall average of 163 grams per mile carbon dioxide in model year 2025 will have to be achieved within 13 years or roughly two product cycles.

Organization: Consumer Federation of America (CFA)

The proposed rule recognizes the need to keep the standards in touch with reality in several important ways.

The standards are set at a moderately aggressive level that is clearly beneficial and achievable.

The cost estimates are consistent with the results of independent analyses of technology costs made over the past decade.

The proposed standards are consistent with the rate of improvement that the auto industry achieved in the first decade of the fuel economy standard setting program.

The new approach to setting standards is consumer-friendly and facilitates automaker compliance. The standards do not require dramatic shifts in power train technologies or reductions in weight and offer flexibility and incentives for new technologies, and include a mid-term review.

The setting of a coordinated national standard that lays out a steady rate of increase over a long time period gives consumers and the industry certainty and time to adapt to change. [EPA-HQ-OAR-2010-0799-9419-A1, p. 8]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 90-91.]

The standards accelerate the adoption of existing technologies at costs that are widely recognized. They provide incentives in flexibility for new technologies.

The setting of a long steady path over a long time period coordinated across all the agencies in this country gives consumers and the industry the time they need to adjust.

Fifth, the auto industry has a strong incentive to comply. The standard takes the risk out of investing in fuel efficiency. All the auto makers have to do -- you don't have to worry about some guy manufacturing cheap fuel inefficient cars. They all have to comply.

Organization: Consumer Reports

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 168.]

The proposed targets are aggressive, but they're also conservative enough to allow the manufacturers to increase the deployment of new technologies to meet these requirements.

Organization: Consumers Union

Because the proposed rule provides ample lead time—approximately two and a half design cycles by 2025—automakers will be able to incorporate more efficient technologies and materials into the vehicles at a measured pace, thus reducing compliance costs and putting everyone on the same playing field in the race to find the best, most efficient way to meet new fuel economy targets. The proposed targets are aggressive enough to encourage groundbreaking new technological advances, but conservative enough to be attained even with strong incremental improvements and increased deployment of existing technology. [EPA-HQ-OAR-2010-0799-9454-A2, p.2]

Organization: Ecology Center

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 188-189.]

Second, we do like the longer time frame contained in the proposed rules. By looking out further into the future the rules can ensure consistency of approach and allow manufacturers to better plan for the vehicles that they will need to develop.

Organization: Environmental Consultants of Michigan

Tailpipe greenhouse gas standards (the flip side of CAFÉ) cannot achieve the target reductions

Using the latest government greenhouse gas lifecycle model for the transportation sector, GREET 2011, one can conclude that achieving carbon neutrality through tailpipe emission standards is not within the realm of possibility. [NHTSA-2010-0131-0166-A1, p. 3]

According to the 2011 Department of Energy greenhouse gas model, replacing the entire on road fleet of light duty cars and trucks with gasoline powered vehicles that achieve over 125 miles per gallon is necessary to reduce segment GHGs by 80%. This is not a CAFÉ standard of 125 mpg but every car and truck on the road would have to achieve this level of on-road efficiency. These levels are more than double the proposal. [NHTSA-2010-0131-0166-A1, p. 3]

Battery electric vehicles are even less useful in reaching the goal of carbon neutrality. Replacing every car and truck on the road with electric vehicles would reduce GHG emissions by only 26% at a cost of \$2.5 trillion plus the cost of additional fuel production. Advocates of the electric option opine that use of carbon free electricity will be prevalent in the future. The federal government recently invested a half trillion dollars in the solar power company Solyndra only to

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have the company go bankrupt. The dream of solar power is a long way off. Others point to wind power as the solution for electricity. Already environmentalists are lining up protesting wind farms because of the noise pollution and the fact that the turbine blades kill large numbers of migratory birds⁷. Nuclear power is not supported by environmentalists and hydropower can also present problems for endangered species. [NHTSA-2010-0131-0166-A1, pp. 3-4]

Replacing every car and truck on the road with a hydrogen fuel cell powered vehicle would reduce GHG emissions by only 41% at a cost of \$2.5 trillion not counting the fuel infrastructure cost. Hydrogen is one of the most difficult fuels to transport because of the corrosive effect of hydrogen on most metals. [NHTSA-2010-0131-0166-A1, p. 4]

Agency Was Arbitrary and Capricious In Its Selection of Standards

The Agency suggests the proposed standards of 50 miles per gallon could be achieved at a cost of about \$2000 per vehicle. Even a cursory look at the data from EPA's 2012 model year fuel economy mileage guide demonstrates this review was arbitrary and capricious. [NHTSA-2010-0131-0166-A1, p. 5]

Only seven of the 900 plus models listed in the 2012 model year fuel economy guide would meet the 2025 model year proposed standards; one hydrogen fuel cell vehicle, three battery electric vehicles and three hybrid electric vehicles. As demonstrated above, hydrogen and electric vehicles cannot achieve the necessary greenhouse gas emissions and cost substantially more than \$2000 per vehicle. [NHTSA-2010-0131-0166-A1, p. 6]

The median MSRP price increase for a hybrid electric vehicle in the 2011 model year was over \$7000. Using the EPA's own fuel economy benefit and annual fuel costs published in the fuel economy guide it would take over 273,000 miles of driving to pay off the initial price premium for the average hybrid¹⁰ not counting the battery¹¹ replacement every 10 years. The breakeven mileage for the highest selling hybrid electric vehicle, the Toyota Prius, is over 226,000 miles not counting the battery replacements. The second highest selling hybrid electric vehicle, the Honda Civic, never reaches its breakeven mileage. Over half the hybrid electric vehicles in the market last year would never¹² reach their breakeven point according to EPA annual fuel costs not factoring in the cost of replacement batteries. More than half (60%) of 2012 model year hybrid electric vehicles (Table 3) were more than 10 miles per gallon below their 2025 model year target and all the hybrid electric vehicles have 6 or more forward gears. The average shortfall for all hybrid electric vehicles was over 9 miles per gallon. [Table 3 can be found on p. 24 of Docket number NHTSA-2010-0131-0166-A1] [NHTSA-2010-0131-0166-A1, p. 6]

Hybrid electric vehicles have been in the market for fourteen years and still represent less than 2.5% of sales despite generous subsidies. There were 26 hybrid electric vehicles in the market in 2011 yet over half the sales were a single model. Hybrids are having a difficult time gaining acceptance in the marketplace likely due to the economic reality that they do not save consumers money. [NHTSA-2010-0131-0166-A1, p. 6]

The median price increase for a diesel engine in the 2012 model year is over \$5000. Using the EPA fuel economy benefit and annual fuel costs it would take over 214,000 miles of driving to

pay off the initial price premium. Eighty-five percent of 2012 model year diesel equipped vehicles (Table 4) were more than 10 miles per gallon below their 2025 model year target despite having six or more forward gears. The average shortfall was over 12 miles per gallon. Thus advanced technology diesel and hybrid technology as currently deployed in the market are insufficient to meet the projected standards and cost substantially more than the Agency estimates. [Table 4 can be found on p. 25 of Docket number NHTSA-2010-0131-0166-A1] [NHTSA-2010-0131-0166-A1, p. 6]

Ninety percent of the 50 most fuel efficient non-hybrid 2012 model year trucks (Table 7) were more than 10 miles per gallon short of their 2025 model year target. The average shortfall was over 23 miles per gallon. [Table 7 can be found on p. 27 of Docket number NHTSA-2010-0131-0166-A1] [NHTSA-2010-0131-0166-A1, p. 7]

Ninety-four percent of the 50 most fuel efficient non-hybrid 2012 model year passenger cars (Table 8) were more than 10 miles per gallon short of their 2025 model year target. The average shortfall was over 15 miles per gallon. [Table 8 can be found on p. 28 of Docket number NHTSA-2010-0131-0166-A1] [NHTSA-2010-0131-0166-A1, p. 7]

Collectively, the 2012 model year data clearly demonstrates that the proposed targets cannot be achieved at the costs assumed by the Agency or with conventional technology. [NHTSA-2010-0131-0166-A1, p. 7]

7 Wind power is the fastest developing source of energy in the United States and can be an important part of the solution to climate change. However, wind farms can kill birds through collisions with turbines and associated structures, and also harm them through the loss of habitat that birds need for survival. A 2008 Department of Energy report calls for the U.S. to generate 20% of its electricity from wind by 2030. By then, wind turbines are expected to be killing at least one million birds each year, and probably significantly more, depending on the final scale of wind build-out. Wind farms are also expected to impact almost 20,000 square miles of terrestrial habitat, and over 4,000 square miles of marine habitat by 2030, some critical to threatened species. (American Bird Conservancy)

10 Comparisons are to gasoline counterpart similar to consumers' purchase decisions; the proposal counts fuel savings from the fleet average and does not use a comparable vehicle as the basis for fuel saving.

11 The Agency values the battery at about \$4000; requiring over 150,000 miles of additional driving to pay back; Honda also lists the battery at about \$4000

12 Defined as having a breakeven mileage in excess of 300,000 miles

Organization: Ferrari

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We believe that it is right to propose now a CAFE regulation that covers the entire 9-year period MYs 2017-25, but it is necessary to make a mid-term review, to verify the consistency of the proposed standards, due to the many uncertainties that are implicit in the technical and economic assumptions that form the basis for the proposed standards. In case of any changes or more stringent requirements, enough lead-time should be allowed. It is important for vehicle manufacturers to have clear and stable regulations, and enough lead-time before they are first adopted or modified. [EPA-HQ-OAR-2010-0799-9535-A2, p.14]

Organization: Ford Motor Company

Car and Truck Stringencies: The proposed fuel economy and GHG standards for 2017 and beyond take into account the particular attributes, needs and customer expectations for light trucks relative to passenger cars, and this must carry through to the final rule. [EPA-HQ-OAR-2010-0799-9463-A1, pp. 2 and 5]

Ford also believes that the relative stringency levels for the car and truck fleets, as proposed by the agencies, are appropriate. [EPA-HQ-OAR-2010-0799-9463-A1, p. 8]

Although the proposed 2017 – 2021 model year truck standards may appear to be less stringent than the car standards for the same years, this is not the case. In terms of the product actions necessary to comply, the proposed car and truck standards are roughly equivalent in stringency. This is attributable to the unique attributes expected from trucks—particularly the larger work trucks that constitute a significant portion of our full-line vehicle fleet offering—and also to the overly stringent standards imposed on light duty trucks in the 2012-2016 model year regulation. [EPA-HQ-OAR-2010-0799-9463-A1, p. 8]

The standards that have been proposed by EPA and NHTSA through the 2025 model year represent the most significant federal action ever taken by the US federal government to improve fuel economy and reduce greenhouse gas emissions – nearly doubling the standards that were in place for the 2010 model year. To meet these requirements throughout the 2017-2025 period, substantial capital investments will be necessary to meet consumer demand for more fuel-efficient vehicles, to incorporate new technologies that consumers want, and to compete against other automakers in the marketplace. Some examples of the major planned investments include converting three truck and SUV plants to build small cars, re-tooling our powertrain facilities to manufacture fuel-efficient EcoBoost engines, offering more advanced six-speed transmissions, leveraging our global platforms, increasing our hybrid offerings and production, and moving forward with an aggressive electrification strategy. [EPA-HQ-OAR-2010-0799-9463-A1, p. 8]

In order to be fair to all manufacturers and avoid creating market imbalances, the stringency of the car and truck standards needs to be comparable in terms of the effort and level of investment necessary to comply. The imbalance in the relative stringency of the car/truck standards in the 2012-2016 rules needed to be corrected. In light of the above, we believe that the agencies' proposal with respect to car/truck stringency is sound and should be carried through to the final rule. [EPA-HQ-OAR-2010-0799-9463-A1, p. 10]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 33.]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 86.]

The proposed rules extend through the 2025 model year, which is an unprecedented time frame in the context of fuel economy regulations. This presents a significant challenge for manufacturers. While the establishment of longer-term standards provides manufacturers with targets for future product planning and investment, the longer time frame leads to greater risk that the assumptions underlying the standards do not come to fruition. For example, if the lack of adequate infrastructure hinders the introduction of new fuel-saving technologies, or if fuel prices turn out to be substantially lower than anticipated, it might be necessary to change the standards in order to avoid damage to American auto jobs and the U.S. economy.

Organization: General Motors Company

GM supports the target standard curve shapes, the relative car and truck stringency, and the statistical analysis used to analyze the fleet. [EPA-HQ-OAR-2010-0799-9465-A1, p.2]

GM also urges careful consideration of two key issues raised in the Alliance comments that would affect the implementation stringency of the proposal, namely whether NHTSA should change the current definition of what constitutes a passenger car and a light truck and whether NHTSA needs to further adjust the stringency of its proposed curves to more fully harmonize with the EPA proposed requirements and flexibilities. [EPA-HQ-OAR-2010-0799-9465-A1, p. 2]

Organization: Growth Energy

The fuel economy and GHG standards proposed by the Agencies set ambitious targets for the automobile industry. The standards and other requirements that the Joint NPRM propose, along with other safety and emissions programs, will determine how the U.S. automobile industry allocates its human and financial resources for the next decade. The new-vehicle market will determine whether the automobile industry's efforts to comply with the Agencies' GHG and fuel economy standards are successful. Greenhouse gas standards of the type being proposed by EPA are, for all practical purposes, fuel economy standards, and like fuel economy standards such standards affect nearly every attribute of vehicle design and performance, as well as vehicle retail and operating costs. One of the most ambitious aspects of the Joint NPRM is that it would set standards for the industry over a much longer time frame than any previous fuel economy standards established by NHTSA, including the model-year ("MY") 2012-2016 GHG standards recently promulgated by EPA. [EPA-HQ-OAR-2010-0799-9505-A1, p. 1]

Programs that try to force the market to purchase electric vehicles that the public does not want to buy require public subsidies, increases in the prices of conventional vehicles to subsidize the manufacturers' cost, or both. While California may have some discretion under the Clean Air

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Act to experiment with its own new-vehicle market, and while the Joint NPRM's approach may have the support of some stakeholders in addition to California, NHTSA and EPA have independent duties to determine whether the standards it adopts are economically practicable and take proper account of the state of technology, including the costs of technology. See 49 U.S.C. § 32902(f); 42 U.S.C. § 7521 (a)(2). If the reliance on electric vehicles is misplaced, because there is no statutory mandate for such vehicles in federal law nor any requirement that the Agencies rely on such vehicles in writing GHG or fuel economy standards, the proposed standards in the Joint NPRM need to be scaled back to conform to levels that are economically practicable and also technologically feasible after accounting for costs. [EPA-HQ-OAR-2010-0799-9505-A1, p. 2]

Organization: Haroldson, C.

The proposed standards are too strict [EPA-HQ-OAR-2010-0799-11137-A1, p. 1]

Organization: Honeywell International, Inc.

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 257.]

The program should instead remain technology neutral and recognize all significant performance improvements.

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 209-210.]

Manufacturers must have confidence in a regulatory approach to take the risks necessary to innovate and world's most pressing environment and energy security challenges. We believe that better regulatory approaches are performance-driven, technology neutral, and provide some flexibility, and they must reflect the best available data and signs incorporating the most up-to-date research and technical information.

Organization: Honeywell Transportation Systems

Honeywell strongly endorses a performance-based, technology-neutral approach to regulating emissions and fuel consumption. Honeywell believes that government policy should promote all technology in the same way. Even at the end of the MY 2025 timeframe, internal combustion engine vehicles will continue to dominate the new light duty fleet. Proven, cost-effective technologies that use the nation's current infrastructure and numerous breakthroughs in many internal combustion engine technologies will become available in the years ahead, substantially improving the environmental performance of the vehicle fleet. Yet those benefits could be lost or diminished if the government directs investment towards electric vehicles without simultaneously encouraging continued investment in advanced ICE technologies. [EPA-HQ-OAR-2010-0799-9474-A1, pp.1-2]

Although we recognize that the overall stringency of the regulations encourages investment and improvement throughout the fleet, it is also true that an OEM may gain significant compliance advantage from EVs and PHEVs -- a compliance advantage that would be further enhanced if the credit multipliers are finalized. Much of the technology utilized to obtain that advantage is limited to the battery technology so that the technological advancement does not necessarily transfer to other vehicles. [EPA-HQ-OAR-2010-0799-9474-A1, p.5]

Organization: Howard, P.

One thing I would like to see is that these standards only apply to newly manufactured vehicles and that there will be absolutely no provisions or punishments requiring people to get rid of their perfectly good and operating older vehicles. [EPA-HQ-OAR-2010-0799-10063-A1, p. 1]

Organization: Hrin, S.

It would be good for our national security if cars were required to get more miles to the gallon. I'm not talking about a few miles per gallon more, but much more. [EPA-HQ-OAR-2010-0799-1568, p.1]

I believe car makers should be required to get 100/gallon by 2025. Anything less would be a travesty. [EPA-HQ-OAR-2010-0799-1568, p.1]

Organization: Hyundai America Technical Center

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 22.]

In our discussions with the agencies on this rulemaking, we have consistently supported the standard in excess of 50 miles per gallon.

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 24.]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 23.]

Finally, Hyundai appreciates a substantial lead time for these regulations which will provide stability for long-term product planning.

Organization: International Council on Clean Transportation (ICCT)

The ICCT has two overall objectives for our comments. First, given the accelerating pace of technology development and cost reduction, the proposed standards are not pushing the limits of technology and it will not be difficult or expensive for manufacturers to meet them. Second,

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many cost effective technologies may not be adopted should the stringency be weakened due to unwarranted credits. Our comments are focused on ensuring that the final rule is as robust as possible, including data and information on technology and consumers and suggestions for improvements to the credits. [EPA-HQ-OAR-2010-0799-9512-A1, p. 2]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 196.]

ICCT strongly supports the overall program stringency. However, we are concerned some cost-effective reductions may not be achieved due to certain elements found in the performance rule.

Organization: Jackson, F.W.

10. Equating a 54.5 mpgge average EPA proposal 'mix' to 54.5 mpgg vehicle performance, they are not interchangeable because the 'mix' vehicles need to consider each vehicles 'weight' while a 54.5 mpgge average implies no 'weighting'; e.g. to show the point, a 54.5 mpgge vehicle performance calcs to 1.835 gge to go 100 miles; whereas one 60 mpgge Volt and one 49 mpg HEV also average 54.5 mpgge but the 49 mpg uses 2.04 gg per 100 miles and the 60 mpgge uses 1.67 gge per 100 miles for 2 vehicles using 3.71 gge for 200 miles or an average of 53.9 gge, i.e., not 54.5. Clearly not equivalent. and the farther the vehicles are from the average the more impact, e.g., use one Leaf at 97 mpgge and one 12 mpg 'guzzler' and average is still 54.5 but 'guzzler' alone for 100 miles is by itself 8.33 gge! Then add the 1.03 gge for the Leaf for a 200 mile total of 9.36 gge, or per 100 miles 4.68 gge (21.4 mpgge), or 155% more gge than a 54.5 vehicle. While EPA ref 2 shows 6 vehicle mix scenarios, plug in penetrations minor in all 6, however the option for manufacturers to sell plug-ins to obtain credits and/or multipliers to allow more profitable 'guzzlers' is available and where profitable I expect the profit motive will prevail; yet in EPA's Ref. 2 scenarios I did not find a 2025 model year scenario with high plug-in penetration! [EPA-HQ-OAR-2010-0799-8041-A1, pp. 5-6]

2. EPA Draft Regulatory Impact Analysis 'Proposed Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards' EPA-420-D-11-004 November 2011

Organization: Manufacturers of Emission Controls Association (MECA)

The Manufacturers of Emission Controls Association (MECA) is pleased to provide comments in support of the U.S. EPA's proposed rulemaking to establish 2017 and later model year light-duty vehicle greenhouse gas emission standards and corporate average fuel economy standards. We believe an important opportunity exists to significantly reduce greenhouse gas emissions and improve fuel economy from passenger cars, light-duty trucks, and medium-duty passenger vehicles. [EPA-HQ-OAR-2010-0799-9452-A3, p.1]

Controlling greenhouse gas emissions from the transportation sector is essential to the overall efforts to alleviate long-term impacts on the climate. As detailed in EPA's proposal, there are a

large set of technology combinations that are available to reduce greenhouse gas emissions from passenger vehicles and light-duty trucks, including fuel efficient, state-of-the-art and future advanced gasoline and diesel powertrains. [EPA-HQ-OAR-2010-0799-9452-A3, pp.1-2]

In summary, there are significant opportunities to reduce greenhouse gas emissions from the transportation sector through the design of fuel efficient powertrains that include advanced exhaust emission controls for meeting even the most stringent criteria pollutant standards. MECA believes that advanced emission control systems have a critically important role in future policies that aim to reduce mobile source greenhouse gas emissions. These emission control technologies allow all high efficiency powertrains to compete in the marketplace by enabling these powertrains to meet current and future criteria pollutant standards. In nearly all cases, these fuel-efficient powertrain designs, combined with appropriate emission controls, can be optimized to either minimize fuel consumption impacts associated with the emission control technology, or, in some cases, improve overall fuel consumption of the vehicle. This optimization extends beyond carbon dioxide emissions to include other significant greenhouse gases such as methane, nitrous oxide, and black carbon. [EPA-HQ-OAR-2010-0799-9452-A3, p.6]

MECA commends EPA for taking important steps to reduce greenhouse gas emissions and improve fuel economy from light-duty vehicles. Our industry is prepared to do its part and deliver costeffective, advanced emission control technologies to the market. [EPA-HQ-OAR-2010-0799-9452-A3, p.6]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 180.]

MECA, like many commented already today, supports performance-based standards that are technology neutral.

Organization: Marlinghaus, E.

The stakes are too high. We must dramatically reduce our consumption of fossil fuels - imported or domestic - if we are to prevent catastrophic climate change. Although I support the proposed rule to increase fuel economy for new passenger vehicles to an average of 54.5 miles per gallon by 2025, personally I feel that the date for reaching this standard should be moved forward to at least 2020. [EPA-HQ-OAR-2010-0799-1581-A1, p. 1]

This spring, you set a goal of reducing oil imports by one-third this decade, and in November you proposed fuel efficiency standards that will effectively double current requirements. I commend your efforts, but urge you to set your goals even higher. I believe it is important to increase U.S. investment in fuel efficient technologies, save consumers money at the pump, help this country break its dependence on oil & all fossil/carbon based fuels, and most importantly, protect the environment. Do NOT let these standards be watered down--protect and finalize the new fuel efficiency rules. [EPA-HQ-OAR-2010-0799-1581-A1, p. 1]

Organization: Marshall, C.

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Promulgating the standard might best be done by also implementing companion federal programs involving other agencies, e.g., a financing program allowing U.S. auto manufacturers to retool plants and re-train workers. [EPA-HQ-OAR-2010-0799-5917-A2, p. 1]

Organization: Mass Comment Campaign (10) (National Wildlife Federation Action Fund-1)

President Obama pledged to reduce our oil imports by one-third by 2025. Setting strong vehicle efficiency and emissions standards is the most effective, common-sense step we can take to reduce our dependence on oil. [EPA-HQ-OAR-2010-0799-1244-A1_MASS, p.1]

These standards would also deeply cut US global warming pollution, and help speed the adoption of technology domestically and globally to cut emissions even further. The deep cuts in oil use that result from setting the strongest standards are also critical to reducing the need to drill for oil in increasingly risky, environmentally destructive and higher emitting locations. [EPA-HQ-OAR-2010-0799-1244-A1_MASS, p.1]

From more advanced engines to stronger lightweight materials, automakers have the technology to reach standards of at least 60 miles per gallon by 2025 and achieve the President's goal. Strong standards would also spur American innovation to help our auto industry compete and thrive in a global marketplace, while helping households and businesses save money. [EPA-HQ-OAR-2010-0799-1244-A1_MASS, p.1]

The difference between the strongest and weakest standards you are considering would cost Americans \$370 billion at the pump (with most of the money ending up outside of the U.S.), and add twice as much global warming pollution to the atmosphere. [EPA-HQ-OAR-2010-0799-1244-A1_MASS, p.1]

We need your leadership to set strong fuel economy standards that will break our dependence on oil, curb global warming pollution and provide consumers with more choices of fuel efficient our cars and trucks. [EPA-HQ-OAR-2010-0799-1244-A1_MASS, p.1]

Organization: Mass Comment Campaign (4,505) (Unknown Organization)

All but one of the alternative standards discussed in the rules would allow greenhouse gas emissions from cars and light trucks to increase through 2025; but dangerous climate change cannot be avoided unless greenhouse gases actually decrease. The rules should adopt the alternative that actually decreases carbon pollution every year through 2025. [EPA-HQ-OAR-2010-0799-9595-A1_MASS, p.1]

The rules do not push car makers to look for technological innovation; they allow manufacturers to simply rely on small improvements to technology that already exists. As a result even 13 years from now, in 2025, the U.S. fleet would still do no better than what some cars can already achieve today. By 2025 the United States should do better than the European Union, China and Japan, not continue to lag behind them. [EPA-HQ-OAR-2010-0799-9595-A1_MASS, p.1]

Organization: Mass Comment Campaign (61) (The Social Justice Group)

We, the undersigned, applaud the proposed 54.5 miles per gallon carbon and fuel efficiency standards for cars and light trucks. We urge you to maintain these strong standards and make them final in July of this year. [EPA-HQ-OAR-2010-0799-7406-A1_MASS, p.2]

Organization: Massachusetts Institute of Technology (MIT)

In our Report, we have shown that the proposed regulations are highly demanding on both technological and market deployment fronts. Strong coordinated policies in addition to stringent CAFE requirements will thus be required to incentivize aggressive development of greatly improved propulsion system and vehicle technologies as well as the rapid market penetration of that technology, along with increasing deployment of alternative vehicles and fuels, into actual use. [NHTSA-2010-0131-0229-A1,p.1]

Organization: Mercedes-Benz USA, LLC

Despite this overall support, the continuing stringency increases in the proposal are extremely aggressive, especially for a company that traditionally sells in the luxury car market and with modest volumes over which to spread its compliance obligations. As more fully explained in the Attachment to this letter, DAG suggests the following additional flexibilities and provisions. These measures would assist companies in overcoming market barriers, bringing new and advanced vehicles to market and combining advancements in crash avoidance technology with the fuel consumption reduction and emissions benefits they produce: [EPA-HQ-OAR-2010-0799-9483-A1, p. 2]

The final regulation will impose a set of aggressive and challenging standards. As a technology leader, DAG will continue to employ in its fleet all available technological advancements and will gain real world CO₂ and fuel economy benefits through off-cycle technologies. DAG appreciates the opportunity to comment upon the proposal and looks forward to continuing to work with the agencies during finalization and implementation of the regulations. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-19]

Organization: Miller, P.

This rule should be moved to 2020 with an addition of a separate part which provides far more federal R&D for cars that don't use fossil fuels at all -- including hydrogen and advanced electric cars, funds for plug ins, etc. This would help global warming by reducing carbon emissions while it developed entire new industries that keep our energy dollars in the US = lasting industries. [EPA-HQ-OAR-2010-0799-1755-A1, p. 1]

Organization: National Association of Clean Air Agencies (NACAA)

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 42.]

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And go to finally, NACAA urges that EPA and NHTSA ensure that this final rule is promulgated by July 2012 as planned, and encourages EPA upon promulgation of this rule to begin assessing the efficacy of another phase of standards to apply to post 2025 model year vehicles.

Organization: National Association of Clean Air Agencies (NACAA)

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 69.]

Secondly, NADA wants the highest fuel economy that we can get as long as the mandates are feasible and affordable as customers do have choices.

Organization: National Wildlife Federation (NWF)

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 32.]

A recent survey by Consumers Reports found that 93 percent of the public is in support of stricter fuel economy standards. The public understands how the fuel standards work. They work for wildlife, they work for American families and they work for the auto industry and autoworkers and for the overall economy.

Organization: Northeast States for Coordinated Air Use Management (NESCAUM)

Annual Rates of Emissions Reductions

EPA's proposed rule would incorporate a carbon dioxide equivalent standard that requires annual average reduction rates of 5 percent for passenger cars and 3.5 percent for light trucks in model years (MY) 2017 to 2021 and 5 percent for all light-duty vehicles for MY 2022 to 2025. For reasons set forth herein and in our November 1, 2010 letter (attached), NESCAUM believes a 6 percent rate for passenger cars is technically feasible and economically practicable. We strongly encourage EPA to consider incorporating a more stringent rate of improvement in this rule.[EPA-HQ-OAR-2010-0799-9476-A1, p. 1]

EPA's technology analysis projects that battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) will account for as little as 1 percent of sales in 2021 and 3 percent of sales in 2025. EPA and the NHTSA previously estimated that a 6 percent annual rate of improvement for the combined passenger car and truck fleet could be achieved with as little as 4 percent combined sales share of BEVs and PHEVs in 2025, provided that sales of conventional hybrids continue to increase. Given the proposed rule initially establishes a less stringent standard for light trucks (3.5 percent reduction rate from MY 2017 to 2021), achieving a 6 percent reduction rate for passenger cars alone would likely require even lower penetration rates than EPA's previous estimates. The majority of major auto manufacturers will be selling BEVs or PHEVs as part of their offering of passenger cars, beginning with MY 2013. Forecasts of significant reductions in the weight and cost of electric vehicle technologies further support our conclusion that the modest increase in sales of these advanced technology vehicles required to

achieve a fleet-wide 6 percent annual rate of improvement for passenger cars is viable.⁴ [EPA-HQ-OAR-2010-0799-9476-A1, pp. 1-2]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 70-74.]

The proposed rule before us today incorporates carbon dioxide emissions reduction at average annual rates in model years 2017 through 2021 of five percent for passenger cars and three point five percent for light trucks.

For model years '22 through 2025 the rate is set at five percent for all light-duty vehicles.

NESCAUM states continue to affirm our previous position that a six-percent rate is technically feasible and economically practical and encourage EPA to strongly consider incorporating this more stringent rate of improvement into the rule.

NESCAUM states encourage EPA to consider the six-percent annual rate of improvement.

4 MIT Energy Initiative. Electrification of the Transportation System. April, 2010.

Organization: Plant Oil Powered Diesel Fuel Systems, Inc.

b. de-couple fuel efficiency policy from GHG emissions policy, since they are distinct and the former is not a surrogate for the latter; [EPA-HQ-OAR-2010-0799-10337-A2, p. 2]

Organization: RVIA

EPA and NHTSA should closely examine whether they have appropriately considered future light vehicle towing trends in setting standards for light duty passenger cars, cross-over vehicles, minivans and other vehicles that will be used more in the future to tow RV trailers and similar towable products. [EPA-HQ-OAR-2010-0799-9550-A2, p.5]

Organization: Smith, Frank Houston

Please note that the current 40 UK gasoline vehicle configurations rated >60 mpg(Imperial) combined are generally similar in size to the Fiat 500 or fortwo. This suggests something more than “advanced” gasoline ICE technologies are necessary to accomplish fuel economies above 45~50 mpg(US) combined for machines currently considered mid and compact sized light passenger vehicles in the US. [NHTSA-2010-0131-0240-A1, p.2]

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Here are the 20 US vehicles that have broken the 50 mpg highway barrier since 1984:
<http://www.fueleconomy.gov/feg/Power...g=50&maxmpg=70> [NHTSA-2010-0131-0240-A1, p.2]

51~53 mpg - Chevy Sprinter ER 1986~1987

51 mpg - Chevy Sprint Metro 1988

52 mpg - Chevy Sprint Metro 1989~1994

51 mpg - Civic CRX HF 1986~1987

50 mpg - Civic HB VX 1994~1995

58~61 mpg - Honda Insight 2001~2006

A total of 20 vehicles in the last 28 years, with nothing post 2006. [NHTSA-2010-0131-0240-A1, p.2]

And, here are the only 11 vehicles recognized by
<http://www.fueleconomy.gov/feg/powerSearch.jsp> to have achieved ≥ 50 mpg(US) combined since 1984:

50 mpg(US) combined - Toyota Prius C 2012 & Prius 2010 through 2012

52~53 mpg(US) combined - Honda Insight 2000 through 2006 [NHTSA-2010-0131-0240-A1, p.3]

Organization: Society of the Plastics Industry, Inc. (SPI)

SPI supports the aim to preserve consumer choice in vehicles, and likewise seeks for manufacturers to have a fully captured and incentivized range of technological options to reduce emissions and increase fuel efficiency. [EPA-HQ-OAR-2010-0799-9492-A1, p.2]

Organization: Susan R.

Please increase the minimum MPG. If auto makers will routinely offer vehicles that offer a 50+ MPG, the gas savings alone would pay for an upgrade in vehicle. PLEASE - for our environment and just plain common sense, increase the minimums! [EPA-HQ-OAR-2010-0799-10792-A1, p. 1]

Organization: Tarazevich, Yegor

There should be one target for everyone (by 2025 it will be CAFE 54.5 MPG which is equal EPA 40 MPG). Every new car that does not meet the target should pay a penalty of \$500 per every MPG under the standard. If one wants to buy a huge 20 MPG gas guzzler he will pay a

\$10,000 penalty for air pollution and oil dependency. This is the only way to eliminate all loopholes. [NHTSA-2010-0131-0199,p.1]

Organization: Toyota Motor North America

The 163 grams per mile (54.5 miles per gallon equivalent) proposed standard for 2025 model year is truly groundbreaking and will provide significant environmental and energy savings benefits. While Toyota feels confident that our leadership in advanced technology vehicles provides a strong foundation, meeting the proposed standards poses a formidable challenge for our engineers and product planners. [EPA-HQ-OAR-2010-0799-9586-A1, p.2]

While Toyota understands that the utility provided by larger trucks is a factor driving the lower overall target increases for trucks as a whole, and the lack of improvement required for larger trucks for 2017-2021 model years, the agencies must ensure that purchasers of affordable and fuel efficient smaller cars (and smaller trucks) do not bear a disproportionate burden as a result. As proposed, the standards may drive manufacturers of smaller footprint cars to add technology and cost to vehicles that are already among the most fuel-efficient and price sensitive in the market, while requiring little improvement of the largest vehicles on the road. This dilemma appears to be an unintended consequence of the shift to an attribute-based fuel economy and greenhouse gas regulation scheme and must be considered as standards are increased in this rulemaking and in the future. [EPA-HQ-OAR-2010-0799-9586-A1, p.2]

In particular, NHTSA should take steps to modify its target curves to account for the limited credit trading and transferring allowed under its authorizing statute. [EPA-HQ-OAR-2010-0799-9586-A1, p.2]

The overall level of the proposed standards in 2025 model year is consistent with the agreement signed by Toyota last July and the joint Supplemental Notice of Intent (NOI) published last August. These standards will pose a substantial challenge our engineers and product planners, but Toyota is prepared to make every effort to comply. [EPA-HQ-OAR-2010-0799-9586-A1, p.5]

While Toyota understands that the utility provided by larger trucks is a factor driving the lower overall target increases for trucks as a whole, and the complete lack of improvement required for larger trucks for 2017-2021 model years, the agencies must ensure that purchasers of affordable and fuel efficient smaller cars (and smaller trucks) do not bear a disproportionate burden as a result. The target curves as proposed will drive manufacturers of smaller footprint cars to add technology and cost to vehicles that are already among the most fuel efficient in the market, and which are also among the most price-sensitive in the market, while requiring virtually nothing of the largest vehicles on the road. This dilemma appears to be an unintended consequence of the shift to an attribute-based fuel economy and GHG regulation scheme and must be considered as standards are increased in this rulemaking and in the future. [EPA-HQ-OAR-2010-0799-9586-A1, p.5]

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Further, subject to specific comments provided later in this document, Toyota generally supports the added flexibilities proposed by EPA in the form of the following provisions: (1) sales multipliers for advanced technology vehicles; (2) unlimited transfer of credits between fleets; (3) A/C system leakage credits; and (4) one-time carry forward of 2010/2016 model year GHG credits through the 2021 model year. Unfortunately, NHTSA does not believe it can propose or adopt these same flexibility provisions for the CAFE regulations. To account for these differences, NHTSA has proposed to set the CAFE target curves at different (lower) 'MPGe' levels than EPA's GHG target curves for a given model year. However, Toyota's understanding is that NHTSA's target curves have only been adjusted to account for the lack of sales multiplier and A/C system leakage credits in the proposed NHTSA regulations, while no adjustments have been made to account the lack of unlimited credit trading and one-time carry forward in the proposed NHTSA regulations. The result of this difference in flexibility is a difference in stringency between the programs. Granted, the one-time carry forward is a temporary flexibility that has no impact beyond 2021 model year, so the long-term effect of this difference is less material. However, the difference in credit trading and transferring is a significant and long-term (fixed) difference that substantively affects stringency. [EPA-HQ-OAR-2010-0799-9586-A1, pp.5-6]

We request that the agencies further evaluate this potential stringency gap and take measures to address this gap, either through increased flexibility in the NHTSA program or by adjusting the NHTSA curves to account for the difference in stringency. [EPA-HQ-OAR-2010-0799-9586-A1, p.6]

Organization: Union of Concerned Scientists (UCS)

(a) Overall Stringency & Technical Feasibility

In the proposed rule, EPA presents standards yielding a projected fleetwide greenhouse gas average of 163 g/mi in model year 2025. NHTSA is proposing a harmonized CAFE standard yielding a projected fleet average of 40.9 mpg in MY2021 and 49.6 mpg in MY2025 – due to its statutory limitations requiring rulemakings no longer than five model years. While the proposed standards represent significant progress, the technology exists to establish even more stringent standards consistent with the agencies' statutory obligations. [EPA-HQ-OAR-2010-0799-9567-A2, p. 5]

The agencies' original TAR laid out four scenarios ranging from a 3-6% annual reduction in greenhouse gas emissions. As stated in our original comments to the NOI, the data continue to support a 6% annual reduction (143 g/mi in MY2025) as technically feasible and increasing the net societal benefits as demonstrated by our joint technical analysis with the Natural Resources Defense Council that has already been submitted to the docket. [EPA-HQ-OAR-2010-0799-9567-A2, p. 5]

In our original comments to the NOI, UCS urged the agencies to set standards based on the full set of societal benefits, not just fuel savings. Specifically, we stated “monetization of the full set of societal benefits should be assessed, including (but not limited to) improved energy security

through reduced oil consumption, lower carbon emissions, and enhanced economic security in the face of likely gasoline price spikes.”¹⁹ [EPA-HQ-OAR-2010-0799-9567-A2, p. 5]

Current market conditions reflect that more stringent standards are achievable. According to UCS analysis, 39 models sold today – including conventional, hybrid, and advanced technology – are already sold in a version that meets their MY2017 proposed targets. Of these models, nearly two dozen meet the target for MY2020.²⁶ An analysis in the Draft Joint Regulatory Impact Analysis confirms these findings, and identifies another 33 nameplates sold today that nearly meet their MY2017 targets, missing them by five percent or less.²⁷ These data, as well as the agencies’ data on technology potential, indicate that higher stringencies should be set – particularly in the light-truck fleet, where the proposed annual rate of improvement is exceedingly weak for large footprint models. We provide further detail regarding our concerns on the light truck standards in Section II(b) below. [EPA-HQ-OAR-2010-0799-9567-A2, pp. 6-7]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 215.]

UCS urges the agencies to finalize strong vehicle standards with the attention paid to susceptible provisions in the proposal that if exploited by auto makers would reduce the programs anticipated benefits.

19 Union of Concerned Scientists. Comments Concerning EPA’s and NHTSA’s Notice of Intent to Conduct a Joint Rulemaking, 2017 and Later Model Year Light Duty Vehicle GHG Emissions and CAFE Standards. November 3, 2010. p. 4 [EPA-HQ-OAR-2010-0799-9567-A2, p. 5]

26 <http://blog.ucsusa.org/the-future-is-now-39-models-meet-tomorrow%E2%80%99s-fuel-economy-requirements-today>

27 Draft Joint Regulatory Analysis, Table 3.12-1

Organization: United Automobile Workers (UAW)

The UAW believes strongly that the proposed regulations are sensible, achievable and needed. They are good for the auto industry and its workers, good for the broader economy, good for the environment and good for our national security. Adopting the proposed rules will give an additional boost to the ongoing revitalization of the auto industry, and for those reasons we recommend adoption of these proposals in the final rules. Thank you for considering the views of the UAW on these important issues. [EPA-HQ-OAR-2010-0799-9563-A2, p.8]

Organization: Van Coppenolle, J. and L.

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The need for stringent vehicle performance standards is critical. Vehicles are a major cause of poor air quality and adverse climate conditions, and the larger the vehicle, the greater the effect. [EPA-HQ-OAR-2010-0799-1284-A1, p. 1]

1) The higher standards do not apply to all vehicles across the board, allowing automakers a potential loophole if they decide to reclassify cars as SUVs, pick up trucks, etc., which have lower proposed standards. [EPA-HQ-OAR-2010-0799-1284-A1, p. 1]

2) The new standards take effect only in 2017, though automakers are fully capable of implementing them far sooner than that. The effective date should be moved forward, to 2015 at the very latest. Please do not allow automakers to deceive you into believing they cannot meet an earlier deadline. [EPA-HQ-OAR-2010-0799-1284-A1, p. 1]

Please revise the standards so that the highest ones apply to all vehicles and they take effect within the next three years. [EPA-HQ-OAR-2010-0799-1284-A1, p. 1]

Organization: Volkswagen Group of America

Volkswagen provided a framework of what we believe to be an achievable and balanced regulatory program aimed at advancing environmental and energy objectives while maintaining market feasibility and customer acceptance. In general Volkswagen put forward a concept for a regulation with equitable CO₂ reductions amongst all segments and sizes of vehicles. We combined this with broad incentives targeted at advancing interest by consumers into more efficient, lower emitting vehicles. We further proposed incentives to promote use of bio-based fuels which would help drive low emitting technology into vehicles while also advancing the goals of the US Renewable Fuels Standards. [EPA-HQ-OAR-2010-0799-9569-A1, letter p. 2]

Volkswagen remains predominantly a passenger cars manufacturer. We believe that cars offering a balanced mix of premium features, advanced safety, and invigorating dynamics can deliver a first order reduction in CO₂ emissions versus other common choices made for daily consumer use. [EPA-HQ-OAR-2010-0799-9569-A1, letter p. 2]

The SNOI and subsequent NPRM outline an aggressive advancement of CO₂ emission targets. However Volkswagen disagrees with details of the framework, primarily the imbalanced distribution of burden and the inclusion of targeted, segment and technology specific incentives. As such, we were not in a position to endorse the proposal as did many of our industry counterparts. Instead, Volkswagen will offer within these comments a suite of proposals aimed at improving the overall balance of the proposal. [EPA-HQ-OAR-2010-0799-9569-A1, letter p. 2]

Volkswagen markets a broad range of fuel efficient passenger cars and light trucks in the US. We understand the importance of increasing fuel economy with standards that are:

- Aimed at reaching aggressive environmental targets
- Achievable with an assortment of conventional and advanced technology

- Flexible and feature a broad package of flexibility
- Most importantly, affordable for consumers [EPA-HQ-OAR-2010-0799-9569-A1, p. 3]

We are committed to continually offering fuel efficient vehicles, such as the new mid-size, clean diesel Passat TDI, available to the U.S. market.

- Built in our new LEED Platinum Certified factory in Chattanooga, TN
- Passat TDI achieves 43 mpg highway and can travel almost 800 miles on a single tank of fuel
- Volkswagen anticipates that over 30% of our customers will select the fuel-saving TDI Passat [EPA-HQ-OAR-2010-0799-9569-A1, p. 3]

In addition, Volkswagen continues to develop vehicles featuring a broad array of fuel saving technologies. It is our overall goal to offer a competitive suite of market viable technologies for our customers to choose from. We recognize that a full range of affordable technologies and vehicles will be needed to fit the diverse needs of our customers. [EPA-HQ-OAR-2010-0799-9569-A1, p. 3]

Volkswagen actively engaged with the agencies at a technical level to provide estimates of future emissions reduction and fuel economy technology. During this time, Volkswagen outlined a series of key principles to help define a balanced regulatory program for 2017+. However, following our review of the 2010 Supplemental Notice of Intent (SNOI) and subsequently the Notice of Proposed Rulemaking (NPRM), Volkswagen was concerned that the proposed regulation contained elements which would eventually produce an unbalanced, inequitable rule. [EPA-HQ-OAR-2010-0799-9569-A1, p. 3]

Through these comments, Volkswagen will outline our main concerns and will define the implications of key elements which will lead to the inequitable treatment amongst manufacturers. Volkswagen will conclude the comments with a series of proposals aimed at improving the overall balance of the rule. [EPA-HQ-OAR-2010-0799-9569-A1, p. 3]

It was Volkswagens' position that all segments of vehicles within each compliance fleet should be capable of carrying an equitable burden in CO₂ reduction per year. [EPA-HQ-OAR-2010-0799-9569-A1, p. 5]

a. Equal stringency for cars and trucks in the range of 4%/year for 2017-2021

It was Volkswagen's position based on predictions for technical readiness and consumer affordability that an annual reduction in the range of 4% CO₂ promoted a balanced regulation for both cars and trucks for 2017-2021. An equal stringency equitably distributes the burden for reduction across all segments within the fleet. [EPA-HQ-OAR-2010-0799-9569-A1, p. 5]

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Further, Volkswagen explained that there are many uncertainties regarding the market acceptance, cost and benefits of technologies such as hybrids, plug-in hybrids, lightweight materials and advanced combustion engines. It was also Volkswagen's position that stringency in the later phase of 2022-2025 could possibly be adjusted upward or downward following a midterm review that would provide more certainty over the cost, benefit and market forces surrounding more advanced technology. [EPA-HQ-OAR-2010-0799-9569-A1, p. 5]

In summary, Volkswagen's principles offered an equitable regulation driving aggressive reductions from the entire light-duty vehicle market. Importantly, the Volkswagen framework did not penalize an auto manufacturer who is more focused on the passenger car market versus large work trucks. We also believed that footprint curves based on equal stringency regardless of footprint size did not penalize smaller trucks. [EPA-HQ-OAR-2010-0799-9569-A1, p. 5]

Volkswagen contends that a regulation with equal stringency for both cars and trucks and with equal stringency across all footprints would result in a regulation that does not encourage manufacturers to increase footprint or change vehicle classifications. Achieving equal distribution would help assure that manufacturers focusing on passenger cars would continue to market or even expand this segment. Volkswagen also contends that a regulation structured in this manner does not place additional burden on affordable high volume vehicles that already save the most CO₂ per market segment. [EPA-HQ-OAR-2010-0799-9569-A1, pp. 5-6]

- a. Requires a stringency only for passenger cars that exceeds what Volkswagen predicted as a would be a both feasible and balanced requirement;
- b. Fails to provide equal treatment for all vehicles by requiring higher stringency for cars and lower for trucks;
- c. Continues with aggressive requirements beyond 2021 based on critical assumptions about the market and technologies which are simply too uncertain to appropriately comprehend; [EPA-HQ-OAR-2010-0799-9569-A1, p. 6]

With the publication of the SNOI and the subsequent NPRM, the agencies essentially followed the Volkswagen vision for reduced stringency in the first phase of the regulation (see Section 1.1a). However, this only applied to the highest CO₂ emitting segment of the light-duty fleet, trucks. Larger trucks in particular were provided with minimal CO₂ reduction requirements through the early years of the proposal. [EPA-HQ-OAR-2010-0799-9569-A1, p. 6]

The combination of lower stringency for larger trucks, combined with segment exclusive credit opportunities has the potential to distort the future light duty vehicle market. The agencies have disputed this claim, stating that work trucks have special needs and are challenged by the regulation even at the proposed stringency. In fact the agencies have contended that the work truck stringency is so great that even at the proposed levels they expect work truck manufacturers to earn credit in the passenger car segment and transfer that credit to the truck segment to assist truck segment compliance. If this is the case the agencies could have still created a regulation that was more equitable with equal stringency for cars and trucks. A regulation with stringency in the range of 4% for both segments would have resulted in extra

credit in the passenger car segment that would have afforded work truck companies additional credit they could transfer to the truck category to offset the increased stringency of a balanced regulation compared to the lower stringency for trucks as proposed in the SNOI and NPRM. Volkswagen will expand on this argument in the comments that follow. [EPA-HQ-OAR-2010-0799-9569-A1, pp. 6-7]

In summary, Volkswagen is concerned that the proposal will result in significant competitive inequity and will create market distortions affecting consumer purchase decisions. Furthermore, the proposal disproportionately impacts manufacturers who market primarily passenger cars while in turn benefitting producers of higher emitting large trucks. [EPA-HQ-OAR-2010-0799-9569-A1, p. 7]

Consumers ultimately will select a vehicle which best balances their needs and wants with affordability. The market has evolved to include a broad set of vehicles with a wide variety of features and emissions. In spite of the regulations, the choices people make when selecting a vehicle will have the most influence on the overall light duty carbon emissions. [EPA-HQ-OAR-2010-0799-9569-A1, p. 7]

Volkswagen understands that many consumers will continue to demand the utility provided by large trucks and pick-ups, either due to work or family requirements. Indeed, once again, two of the top-selling vehicles in the United States remain full-size pick-up trucks. Far into the future, the utility of these vehicles will continue to make them attractive to consumers. However Volkswagen feels that trucks and cars should be held to an equal percent burden for CO₂ reduction. Large trucks and pick-ups should not be singled out and provided a lesser requirement. [EPA-HQ-OAR-2010-0799-9569-A1, p. 7]

Volkswagen contends that the policy reflected in the NPRM may disproportionately drive cost into passenger cars versus trucks and may ultimately discourage customer consideration of lower CO₂ emitting passenger cars. Market segments should compete on the merits of their utility and affordability. Environmental regulations such as this CO₂ and fuel economy proposal should not at the very least create an unintended benefit for higher emitting trucks. This seems counterintuitive to environmental and energy goals. [EPA-HQ-OAR-2010-0799-9569-A1, p. 7]

Volkswagen will further expand upon our positions within these comments and will offer a series of amendments aimed at improving the overall framework of the proposal. Clearly, we would like to see a more balanced approach that equalizes the compliance burden across the industry. In addition we will offer proposals to modify the flexibilities to recognize a broader set of technologies and be available to other market segments. [EPA-HQ-OAR-2010-0799-9569-A1, p. 7]

As discussed previously, the Volkswagen Group maintains that the stringency and credit inequities within this proposal create a serious competitive disadvantage for Volkswagen. The framework of the proposal does not align with our key principles for a balanced program. [EPA-HQ-OAR-2010-0799-9569-A1, p. 7]

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The following sections highlight the implications of such an inequitable proposal. Much of the competitive disadvantage for Volkswagen stems from the fact that Volkswagen as a group has the highest percentage car/truck split of any larger manufacturer (80% cars/20% trucks) in the US market. As a result, our fleet will be subjected to the most stringent standards, without the benefit of several key credits being offered to higher-emitting segments. This is in spite of the fact that due to the high percentage of passenger cars, Volkswagen has some of the lowest corporate emissions. Volkswagen remains unconvinced that a fleet composed primarily of lower-emitting passenger cars should be subjected to the most stringency standard, and carry such a disproportionate burden for CO₂ reduction. [EPA-HQ-OAR-2010-0799-9569-A1, pp. 7-8]

Volkswagen is concerned that the differences in stringency levels between passenger cars and trucks as proposed within the NPRM creates an inequity in the projected corporate targets that each manufacturer must meet. What is immediately evident is that manufacturers who market a larger percentage of passenger cars versus light trucks will face a more challenging compliance outlook. The practical effect is that passenger car focused manufacturers will face a higher cost of compliance and will be at a price disadvantage in the marketplace. The resulting disparity amongst manufacturers is illustrated in some of the analysis included within the RIA. [EPA-HQ-OAR-2010-0799-9569-A1, p. 8]

Chapter 3 of EPA's RIA provides projections for car and truck targets for major manufacturers for the proposal and several other alternative scenarios. Volkswagen analyzed Table 3.8-3 from the RIA which provides EPA's projections through 2021. Disregarding several niche manufacturers (Aston Martin, Lotus, etc) it is apparent from the table that the proposal creates a higher burden on Volkswagen compared to many of the larger manufacturers, especially those with truck-centric fleets such as Ford or GM. [EPA-HQ-OAR-2010-0799-9569-A1, p. 8]

As shown below in Table 2-1, Volkswagen's 2021 car target is projected by EPA to be 167 g/mi CO₂ which is 6 g/mi less than the fleet average. When compared to manufacturers such as GM or Ford, Volkswagen's target is expected to be 9-10 g/mi more stringent. Volkswagen's truck target shows a similar situation. [See Table 2-1 on p. 8 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 8]

However analyzing the car and truck fleet separately does not show the full extent of the disparity. Table 2-1 also shows the combined sales weighted average target projected by EPA and further calculates the car/truck sales mixture. The car/truck split was not shown in the RIA, but can be derived from the individual compliance fleet and combined fleet target. [EPA-HQ-OAR-2010-0799-9569-A1, p. 8]

Table 2-1 shows Volkswagen having a combined sales weighted target of 184 g/mi. EPA is estimating Volkswagen to continue into the future with an 80% PC and 20% light truck share. This is consistent with Volkswagen's sales history and current projection. [EPA-HQ-OAR-2010-0799-9569-A1, p. 8]

Ford and GM are shown to have approximate sales weighted targets of 205 and 218 g/mi respectively. This is 21 and 34 grams less stringent when compared to Volkswagen. Furthermore, it appears that the combined fleet averages for these two OEMs were made

assuming only 49% truck penetration for GM and 33% truck penetration for Ford. Volkswagen notes that these levels of truck penetration are far less than GM and Ford's current and historic sales split between PC and LT. For example, Ford's 2011 truck share was approximately 63% of their total sales, nearly one-third of which is the F150. GM's truck market share was estimated at 65% based on 2011 sales data. Projections for major manufacturers are illustrated below in Figure 2-1. [See Figure 2-1 on p. 9 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 8]

Volkswagen is concerned that the car/truck split assumed for different manufacturers may be unlikely to prove accurate. As illustrated in Table 2-2, had the EPA RIA calculation applied a truck estimate more consistent with market trends for both Ford and GM, the combined sales weighted fleet average would have approached 232 and 227 g/mi. This would further expand the disparity between corporate standards, resulting in Volkswagen being held to a 46 g/mi more stringent standard. This is 25% disparity in corporate target levels. This additional 46 g/mi translates into approximately 9 metric tons of additional CO₂ emissions per vehicle sold by these manufacturers than by Volkswagen. [See Table 2-2 on p. 9 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 9]

Volkswagen recognizes that the agencies are privy to confidential product plans supplied by manufacturers and that the agencies rely on this data to support future projections. However, the US has been averaging a near 50/50% split between cars and trucks for many years. Even at times of peak gasoline prices experienced during the past few years, interest in light trucks may have waned, however not to such a drastic extent as indicated by this radical shift in future product plans. Most disturbing is the recent trend back to light trucks even with fuel prices stabilizing near record highs. Volkswagen sees no evidence that would suggest a near 30% decline in truck market share from domestic OEMs. [EPA-HQ-OAR-2010-0799-9569-A1, p. 9]

Volkswagen is not privy to strategic plans by competitors, but we find it unlikely for OEMs historically focused on truck sales to so readily abandon what has proven to be a successful and profitable market segment. Dropping 30% truck share for a company like Ford would be equivalent to Ford cancelling their entire line-up of F150s, a vehicle which has remained a top, if not the top, seller in the US for many years. In addition, the proposals preferential treatment for large trucks and pick-ups further makes it unlikely that manufacturers would now prefer to market cars. [EPA-HQ-OAR-2010-0799-9569-A1, pp. 9-10]

NHTSA states in the NPRM that 'the increases in technology application necessary to achieve the projected improvement in fuel economy will entail considerable monetary outlays'. Volkswagen agrees. NHTSA further estimates that the program will require a combined car/truck industry outlay of approximately \$157 billion for 2017 through 2025. What is lost in the broad statement is the disparity in investment required for cars versus trucks. As shown in below in Table 2-3, the outlay for passenger cars far outweighs the investment required by light trucks. [See Table 2-3 on p. 10 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 10]

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It is again important to stress that even within the truck segment, the stringency varies significantly. The investment data was not disaggregated to reflect investment requirements within the truck segment. Given the minimal requirement on larger trucks, Volkswagen must assume that the bulk of the truck investment shown in Table 2-3 is most likely concentrated amongst smaller trucks and SUVs. [EPA-HQ-OAR-2010-0799-9569-A1, p. 10]

The resulting cost increase disparity amongst manufacturers further illustrates the inequity of the program. As shown in Table 2-4, by 2021 the cost to Volkswagen per car as a result of the 2012-2016 and 2017+ regulation will exceed over \$3300 per car. This is more than double the expected price increase for the fleet as a whole. [See Table 2-4 on p. 10 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 10]

Volkswagen continues to support a 4% per year stringency reduction from both passenger cars and light trucks as being the best balance between environmental objectives and market acceptance. However, given the commitments made by stakeholders to the overall framework provided within this proposal, Volkswagen offers the following amendments. [EPA-HQ-OAR-2010-0799-9569-A1, p. 26]

Volkswagen continues to support the concept that equal percent reductions in the order of 4% per year can be applied to both the car and truck fleet. In addition, the percent reduction for each fleet can also be equally applied across all footprint sizes. However, as mentioned above, given the extensive commitments made by stakeholders to the SNOI, Volkswagen finds it unlikely that the agencies will incorporate our principle for equal reductions from all cars and trucks. [EPA-HQ-OAR-2010-0799-9569-A1, p. 27]

Organization: Volvo Car Corporation (VCC)

VCC believes that the current classification framework, the footprint attribute, and the footprint cut-points are reasonable and should be retained. Moreover, any changes to these fundamental elements of the program could have a major impact on the stringency of the standards themselves, and would require extensive reevaluation. [EPA-HQ-OAR-2010-0799-9551-A2, p. 12]

Organization: Whitefoot, K. and Skerlos, S.

To reduce the incentives to upsize the passenger car and light truck fleets, the slopes of the fuel economy curves for passenger cars and light trucks should be flattened with corresponding changes made to the CO₂ curves. [EPA-HQ-OAR-2010-0799-9447-A1, p. 1]

Additional minimum fuel economy standards are warranted due to the substantial risks of backsliding. We encourage NHTSA to establish minimum standards across the combined fleet of passenger cars and light trucks to provide a limit to backsliding. [EPA-HQ-OAR-2010-0799-9447-A1, p. 1]

NHTSA and EPA should conduct sensitivity analyses of consumer preference scenarios on projected improvements of fuel economy and GHG emissions. [EPA-HQ-OAR-2010-0799-9447-A1, p. 1]

Incentives to upsize the vehicle fleet

While we understand that NHTSA and EPA wish to reduce incentives to downsize the vehicle fleet, we believe that the proposed standards overshoot that goal and actually create incentives to upsize the fleet. We recently conducted an analysis, published in Energy Policy, which tests the hypothesis that the footprint-based fuel economy standards do not create a profit incentive for manufacturers to increase the average size of their vehicle fleet (attached). The analysis considered a very large range of average consumer preferences for vehicle size, fuel economy, and acceleration performance so that the set of plausible scenarios of consumer preferences are captured in the analysis. The findings indicate that the incentive for manufacturers to upsize their fleets exists over almost all of these scenarios. Only in the scenarios where average consumer preference for footprint is very low (\$340 per sq ft) and average preference for acceleration performance is very high (\$5,500 per 0.01 hp/lb) do the results indicate an incentive to slightly downsize the fleet. In all other scenarios, the incentive to upsize the fleet leads to substantially (5-15%) higher fuel consumption and GHG emissions than would have otherwise been achieved without an incentive to upsize the fleet. Furthermore, the analysis indicates that the incentive to upsize is larger for light trucks than for passenger cars, increasing the divergence of sizes of these two classes. This finding needs to be considered from the traffic safety perspective since the relative size of vehicles in collisions is an important risk factor. [See the attachment in Docket number EPA-HQ-OAR-2010-0799-9447-A2] [EPA-HQ-OAR-2010-0799-9447-A1, p. 2]

The results of our study suggest that the risk of backsliding during MYs 2017-2025 is substantial. Therefore, we encourage NHTSA and EPA to revise the standards to reduce the incentives to upsize the U.S. vehicle fleet. The slopes of the fuel economy curves for passenger cars and light trucks should be flattened (with corresponding changes made to the CO₂ curves) to reduce incentives for manufacturers to upsize their passenger car and light truck fleets. [EPA-HQ-OAR-2010-0799-9447-A1, p. 2]

Below, we respond to NHTSA's request for comments on additional minimum standards and how they should be structured.

As NHTSA indicates in the proposed rule, the Energy Policy and Conservation Act of 1975 (EPCA), as amended by the Energy Independence and Security Act (EISA) of 2007 explicitly requires NHTSA to establish a minimum standard for domestic passenger cars but is silent as to whether the agency should or could establish other minimum standards. We believe that the requirement in EPCA (as amended by EISA) that the standards "achieve a combined fuel economy average for model year 2020 of at least 35 miles per gallon for the total fleet of passenger and non-passenger automobiles manufactured for sale in the United States" effectively requires NHTSA to establish additional backstops. This is because attribute-based standards (which are required by EPCA as amended by EISA) do not guarantee that any specific combined

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fuel economy average for the total fleet will be met in any year since the attributes of the fleet can change. 1 Therefore, additional minimum standards are needed to meet the requirement of reaching 35 miles per gallon by 2020. [EPA-HQ-OAR-2010-0799-9447-A1, p. 3]

The minimum standards for light trucks and imported passenger cars presented in the proposed rule for comment would help to limit the risk of backsliding and are warranted. However, these minimum standards do not reduce incentives to increase the production of light trucks relative to passenger cars, which would lead to higher fuel consumption and GHG emissions. We recommend that NHTSA establish a minimum standard across the combined fleet of passenger cars and light trucks for each year to limit incentives to increase production of light trucks in response to the regulation. Furthermore, we encourage NHTSA to establish minimum standards for light trucks at a high-enough level to ensure that fuel economy improvements in the total fleet are close to projected levels even if the production of light trucks increases. [EPA-HQ-OAR-2010-0799-9447-A1, p. 3]

Improve analysis of incentives to upsize the vehicle fleet.

The risk of upsizing the vehicle fleet warrants a greater level of analysis. While NHTSA and EPA state that the fuel economy and CO₂ curves were chosen to minimize any incentive to increase or decrease vehicle size, no quantitative analysis is presented to support this. Potential incentives for automakers to upsize their vehicle fleet—by increasing sales of larger vehicles, or making vehicle models larger during redesign, or some combination—need to be carefully analyzed to ensure that the projected improvements in fuel economy and GHG emissions are realized. [EPA-HQ-OAR-2010-0799-9447-A1, p. 3]

NHTSA and EPA state that they do not consider any incentives to upsize the vehicle fleet in their analysis because they believe (1) that production shifts toward larger vehicles would run counter to market demand and (2) that redesigning vehicles to increase their footprint would be significant enough to be unattractive as a measure to take solely to reduce compliance burdens. However, the agencies do not provide any data to support that average vehicle footprint has been decreasing over time. By EPA's own data, production of small cars has been decreasing since the 1990's and production of large trucks has been increasing. 2 Furthermore, it is clearly difficult to predict future consumer preferences for vehicle size and other relevant vehicle attributes. Therefore, sensitivity analyses are needed to assess the impact of changes in consumer preferences on the projected improvements in fuel economy and GHG emissions. [EPA-HQ-OAR-2010-0799-9447-A1, p. 4]

We encourage NHTSA and EPA to develop a model to assess the risks of vehicle upsizing. The model should analyze manufacturers' profitable incentives to adjust vehicle dimensions as well as adjust the prices of their vehicles to shift production among their fleet. [EPA-HQ-OAR-2010-0799-9447-A1, p. 4]

1 Attribute-based standards can guarantee that the average fuel economy of the total fleet is at least as great as the lower-bound fuel economy of the light truck standard (the minimum fuel

economy target assigned to any light-duty vehicle). However, in the proposed standards this value is only 25.25 mpg for MY2020. Requirements to set the standards such that they are technically feasible and economically practicable preclude raising this value to 35 mpg for MY2020. Therefore, the only way to ensure that the total fleet has a combined fuel economy average of 35 mpg by 2020 is to establish additional “backstops” in the standards.

2 U.S. Environmental Protection Agency. Light Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2009. EPA420-R-09-014. pp. 23-24. Available at <http://www.epa.gov/otaq/cert/mpg/fetrends/420r09014.pdf>

Response:

2.2.2. Car Footprint Curve Shape and Level of the Standards

Organizations Included in this Section

RVIA
United Automobile Workers (UAW)
Volkswagen Group of America

Organization: RVIA

Towing considerations for large passenger cars, small SUVs and crossover vehicles [EPA-HQ-OAR-2010-0799-9550-A2, p.2]

With the price of gasoline hovering around four dollars per gallon today, consumers are buying SUVs that ride more like a car, get better fuel economy, but have a greatly diminished towing capacity. For example, the consumer who several years ago might have purchased a Chevy Tahoe (3 rows of seats and towing capacity of 8,500 lbs) might instead today purchase a Chevy Traverse which also has three rows of seats but has a maximum towing capacity of only 5,200 lbs. Similarly, consumers that previously might have purchased an SUV like a Volkswagen Toureg now consider smaller SUVs like the Tiguan, a minivan or even a station wagon. As this downsizing trend progresses, consumers (as they are already) will demand that these vehicles offer more towing capability than offered today. Therefore, we recommend that EPA and NHTSA closely examine whether they have appropriately considered this future light vehicle towing trend in setting standards for light duty passenger cars, cross-over vehicles, minivans and other vehicles that will be used by consumers to tow RV trailers, boats, ATVs, utility trailers, U-Haul rental trailers and the like. [EPA-HQ-OAR-2010-0799-9550-A2, p.2] [There are also images associated with this paragraph, please refer to EPA-HQ-OAR-2010-0799-9550-A2, pp.2-3]

Organization: United Automobile Workers (UAW)

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Third, the UAW is pleased that the proposed CAFE regulations maintain the alternative minimum standard for domestically manufactured passenger cars. This requirement was maintained in EISA as an express mechanism to ensure a certain level of efficiency for the domestically-produced passenger car fleet. [EPA-HQ-OAR-2010-0799-9563-A2, p.2]

Organization: Volkswagen Group of America

Provide an alternative CO₂ reduction pathway for passenger cars which could provide needed flexibility and incentives to the segment of the fleet being most challenged with the highest annual CO₂ percent reductions (5% per year for Cars); [EPA-HQ-OAR-2010-0799-9569-A1, pp. 2 and 4]

The NPRM requires on average a 5% annual improvement in CO₂ emissions from passenger cars. This task is spread equitably across the footprint range of cars. Figure 2-2 illustrates yearly CO₂ targets for cars at the upper cut-point (56 ft²), lower cut-point (41 ft²) and EPA projected average car footprint (45 ft²). During the course of technical discussions with agency staff, Volkswagen supported a 4% annual percent reduction for passenger cars. Volkswagen based this position on both technical and market evidence. [See Figure 2-2 on p. 11 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 11]

EPA has predicted that over the lifetime of passenger cars covered by this rulemaking, the increasingly more stringent targets for cars will offset upwards of 1.2 billion metric tons of CO₂. Light duty trucks which on average face 3.5% annual CO₂ reduction will contribute approximately 800 million metric tons of reduction. [EPA-HQ-OAR-2010-0799-9569-A1, p. 11]

EPA predicts that during the 2017-2025 timeframe, the fleet will comprise of roughly 65% passenger car and 35% light truck. This is according to vehicle classification as defined by NHTSA. Figure 2-3 illustrates an example of EPA's projected MY2020 fleet distribution along with the accompanying CO₂ inventory by segment. [See Figure 2-3 on p. 12 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 11]

When normalized on a percent basis of per vehicle emissions (including VMT), passenger cars are expected to carry a higher burden of reduction as shown in Table 2-5. [See Table 2-5 on p. 12 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 12]

What is apparent in this data is that passenger cars are underweighted in emissions relative to their market share and trucks are overweighted in emissions. There is a value to the environment in promoting passenger cars and not incentivizing a move towards trucks. Incentivizing a shift away from cars and towards trucks will have a contradictory effect on the overall program GHG reductions. [EPA-HQ-OAR-2010-0799-9569-A1, p. 12]

The NPRM extends aggressive reductions for passenger cars into the 2017+ timeframe. Less demanding reductions are required for trucks. As discussed previously, Volkswagen contends that this will create market distortion and an incentive for a manufacture to reconsider future plans. In order to minimize the impact that this inequity could have within the market, an

alternative pathway could be tailored to encourage manufacturers to continue offering cars, especially economy models which may otherwise have become less attractive in the marketplace. [EPA-HQ-OAR-2010-0799-9569-A1, p. 26]

Volkswagen proposes that EPA and NHTSA supplement the NPRM by including an alternative passenger car percent annual CO₂ reduction pathway. This pathway could consist of a series of annual reductions applied throughout the time period of the rule in lieu of the 5% per year currently proposed. Volkswagen believes that a combination of annual percent reductions can be determined which could help provide additional flexibility for passenger car fleets. [EPA-HQ-OAR-2010-0799-9569-A1, p. 26]

In principle, the concept of an alternative pathway would include a combination of lower percent reductions in early years coupled with increasing reductions in later years should technology and market factors make this feasible. Indeed this is similar to the treatment being afforded to the truck fleet. Volkswagen asks that a similar approach be offered for cars. [EPA-HQ-OAR-2010-0799-9569-A1, p. 26]

In addition to the alternative pathway being a compliance flexibility, Volkswagen believes it could also serve as an incentive to promote and provide support for the passenger car fleet. Volkswagen believes that a pathway could be developed which would provide support to low-emitting passenger cars to the same degree that other market segments, are being incentivized through their unique credit programs. As an example, the agencies could benchmark the degree of support being provided to full-size trucks. We contend that this is a reasonable approach and would not amount to an excessive 'loophole' or 'give-away' since it would be consistent with flexibilities found to be useful elsewhere. [EPA-HQ-OAR-2010-0799-9569-A1, pp. 26-27]

Response:

2.2.3. Light Truck Footprint Curve Shape and Level of the Standards

Organizations Included in this Section

American Council for an Energy-Efficient Economy (ACEEE)
 American Honda Motor Co., Inc.
 Anonymous Public Citizen 1
 Association of Global Automakers, Inc. (Global Automakers)
 Capozzelli, J.
 Center for Biological Diversity
 Chrysler Group LLC
 Consumers Union
 Ford Motor Company
 International Council on Clean Transportation (ICCT)
 Mass Comment Campaign (20,500) (Union of Concerned Scientists-3)
 Mass Comment Campaign (375) (Union of Concerned Scientists-2)
 Mass Comment Campaign (4,505) (Unknown Organization)

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Mass Comment Campaign (9,570) (Unknown Organization)
 National Association of Clean Air Agencies (NACAA)
 Natural Resources Defense Council (NRDC)
 Nissan North America, Inc.
 RVIA
 Salinas, A.
 Sierra Club, Environment America, Safe Climate Campaign, and Clean Air Council
 Smith, Frank Houston
 South Coast AQMD
 Toyota Motor North America
 Union of Concerned Scientists (UCS)
 United Automobile Workers (UAW)
 Volkswagen Group of America
 Weiner, L.
 Whitefoot, K. and Skerlos, S.

Organization: American Council for an Energy-Efficient Economy (ACEEE)

We do have concerns regarding the structure of the proposed rule, especially its lenient treatment of large light trucks in the early years and the resulting increase in the slope of the light truck target curves. Below we provide comments and recommendations on these issues, among others. While we take issue with a few aspects of the analysis, on the whole the process and the analysis were thorough, transparent, and well documented. [EPA-HQ-OAR-2010-0799-9528-A2, p.1]

Shape of the Light Truck Target Curves

An issue of particular concern in the proposal is the lenient treatment of large light trucks. In 2017-2020, emissions reductions required of the heaviest light trucks are small. This reflects the agencies' recognition of "manufacturers' technical concerns regarding their abilities to comply with a similarly shallow curve after MY2016 given the anticipated mix of light trucks in MYs 2017–2025." We have not, however, been able to find a clear technical explanation of the justification for these concerns, or of the approach taken, in the proposed rule or in related documents. [EPA-HQ-OAR-2010-0799-9528-A2, p.3]

The agencies refer to the possibility of compromising load-carrying and towing capability of full-size pickups (NPRM p.74915), but neither evidence nor quantification of such a problem is provided. Similarly, section 2.4.2.2 of the TSD discusses the decision to increase the slope of the light truck curve at length, yet the justification remains unclear. The agencies' methodologies for generating the curves and for simulating manufacturers' compliance strategies are quite capable of taking into account any such constraints to the extent that they actually exist. The agencies do explain that the aggregation of models in some cases results in treating non-towing vehicles as towing vehicles, and vice versa; but this appears to apply mostly to smaller vehicles, and certainly not to the large pickups that have prompted the agencies to increase the slopes of the target curves. [EPA-HQ-OAR-2010-0799-9528-A2, p.3]

The agencies also state: “Flatter standards (i.e., curves) increase the risk that both the weight and size of vehicles will be reduced, compromising highway safety” (NPRM p.74915). What the agencies have proposed, however, is to increase the slope of the truck curve, relative to what it would have been using the curve-fitting approach used for MY2012-2016. We do not believe, and presumably the agencies do not believe, that the curves in the rule now in place are dangerously flat. [EPA-HQ-OAR-2010-0799-9528-A2, p.3]

Technical basis for curve / rate of improvement

The approach to selecting the target curves in the current proposal deviates from the approach used for the 2012-2016 rule in several respects that substantially alter the relative stringencies of small truck and large truck standards. The most significant change is that the agencies have adjusted the technology-corrected data points for “density”, i.e., weight-to-footprint ratio. This results in a steeper slope for the light truck curve, because pickup trucks, and in particular the large pickups that dominate the high end of the footprint spectrum, have low densities due to their flat beds (TSD p.2-17). Adjusting the data to reflect this means that large pickup data points are pushed up vertically on a footprint vs. emissions/consumption curve to reflect the higher weight (and hence higher fuel consumption) that would be expected based on the footprints of those trucks. [EPA-HQ-OAR-2010-0799-9528-A2, p.3]

The rationale offered for this adjustment is as follows: “The agencies agree with manufacturers of full-size pick-up trucks that in order to maintain towing and hauling utility, the engines on pick-up trucks must be more powerful, than their low ‘density’ nature would statistically suggest based on the agencies’ current MY2008-based market forecast and the agencies’ current estimates of the effectiveness of different fuel-saving technologies” (TSD 2043). This suggests that the reference fleet, after all available gasoline technologies have been added, is incorrect and shows unrealistically low pickup truck fuel consumption, due to the overstatement of the benefits of certain technologies. If that is the case, the agencies should revisit the adjustments made to generate the reference fleet and remove technologies from pickups that are not suited to those trucks. This would be a far more satisfactory approach than the speculative and non-quantitative approach of adjusting for vehicle density. [EPA-HQ-OAR-2010-0799-9528-A2, pp.3-4]

Indeed, it is important to note that the fuel consumption trend that the density adjustment is meant to correct appears in the unadjusted fleet as well as the technology-adjusted fleet of light trucks (TSD Figures 2-1 and 2-2). That is, the flattening of fuel consumption at higher footprints is not a byproduct of unrealistic technology adjustments, but rather a reflection of actual fuel economy trends in today’s market. That being the case, adjusting fuel consumption of “low-density” trucks upwards before fitting the curve simply does not make sense. It is also puzzling that the agencies’ analysis shows that trucks’ HP-to-weight ratio increases only slightly with footprint (TSD p.2-17), yet “pick-up trucks must be more powerful, than their low ‘density’ nature would statistically suggest.” If pick-up trucks have high horsepower and low weight, their HP-to-weight ratios should be especially high. An explanation of this apparent contradiction would be helpful. [EPA-HQ-OAR-2010-0799-9528-A2, p.4]

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The agencies explored a similar adjustment to the curve to reflect increasing HP-to-weight ratios, but did not adopt it. This adjustment is effectively the approach used to develop weight-based CO₂ targets in the EU and results in flatter curves (Mock 2011). In the EU, the adjustment was made to ensure that the standards do not provide an incentive to increase vehicle weight. In the U.S., the agencies' decision not to apply this correction in the proposed rule yields steeper curves than the alternative choice, as does the decision to apply the correction for density. Both help to ensure that the proposed curves will provide an incentive to upsize vehicles. [EPA-HQ-OAR-2010-0799-9528-A2, p.4]

After adjusting the data based on density, the agencies fit lines to the adjusted data. This process differs from that used for MY2012-2016 rule, in that the data is sales-weighted and the fit uses an ordinary least squares (OLS) method instead of minimum absolute deviation (MAD). In that case, the agencies were "concerned that the steeper curves resulting from weighted least-squares analysis would increase the risk that energy savings and environmental benefits would be lower than projected, because the steeper curves would provide a greater incentive to increase sales of larger vehicles with lower fuel economy levels" (MY2012-2016 TSD p.2-13). That concern remains valid for the current rulemaking. While we agree with the agencies' position that either method of fitting is technically sound, we note that in this NPRM, the agencies have consistently made choices that have the effect of increasing the slopes of the light truck curves, namely to adjust for density and not to adjust for HP-to-weight ratio, as well as to alter the curve-fitting method, as just mentioned. [EPA-HQ-OAR-2010-0799-9528-A2, p.4]

Large truck cutpoint

The problems created by increasing the slope of the truck curve are aggravated by the decision to move the right-hand cutpoint (i.e., the point at which the curve becomes flat) out to 74 square feet, up from 66 square feet in the MY2012-2016 rule. Not only will targets be less stringent for large trucks than they should be, but also the target emissions will continue to rise with truck footprint well beyond the point at which they flattened out in the MY2012-2016 rule. [EPA-HQ-OAR-2010-0799-9528-A2, p.4]

In the MY2012-16 rule, the agencies rejected the requests of auto manufacturers to raise the right-hand truck cutpoint from 66 square feet: [EPA-HQ-OAR-2010-0799-9528-A2, p.4]

The agencies also disagree with comments by the Alliance and several individual manufacturers that the cut-off point for light trucks should be shifted to 72 square feet (from the proposed 66 square feet) to ease compliance burdens facing manufacturers serving the large pickup market. Such a shift would increase the risk that energy and environmental benefits of the standards would be compromised by induced increases in the sales of large pickups, in situations where the increased compliance burden is feasible and appropriate. Also, the agencies' market forecast suggests that most of the light trucks models with footprints larger than 66 square feet have curb weights near or above 5,000 pounds. This suggests, in turn, that in terms of highway safety, there is little or no need to discourage downsizing of light trucks with footprints larger than 66 square feet. Based on these energy, environmental, technological feasibility, economic practicability, and safety considerations, the agencies conclude that the light truck curve should be cut off at 66

square feet, as proposed, rather than at 72 square feet. (2012-2016 Final Rule p.25363) [EPA-HQ-OAR-2010-0799-9528-A2, pp.4-5]

Yet this time, the discussion of policy considerations in developing the target curves includes the following: “If cutpoints are adopted, given the same industry-wide average required fuel economy, moving large-vehicle cutpoints to the right (i.e., down in terms of fuel economy, up in terms of CO₂ emissions) better accommodates the unique design requirements of larger vehicles—especially large pickups—and extends the size range over which downsizing is discouraged.” (NPRM p.74915). While the agencies note that they had previously “underestimate[d] the impact of the different pickup truck model configurations above 66 square feet on manufacturers’ fleet average fuel economy and CO₂ levels” (NPRM p.74919), this is unrelated to the sound reasons they had previously offered for keeping the cutpoint at 66 feet. In particular, they previously noted that there is no safety-related reason to discourage downsizing of these large trucks. Indeed, given that vehicle compatibility is a major determinant of the severity of two-vehicle crashes, reducing the size and weight differential across the vehicle fleet should be a priority to improve highway safety. Thus, for environmental, energy, and safety reasons, the final rule should restore the 66 square foot cutoff for MY 2017-2025. [EPA-HQ-OAR-2010-0799-9528-A2, p.5]

Potential consequences of lenient standards for large light trucks

The agencies seek comment on whether their adjustments to the slope of the target curves “may encourage changes other than encouraging the application of technology to improve fuel economy and reduce CO₂ emissions” (TSD 2-27). The weakness of the standards at the large footprint end of the light truck spectrum not only will result in a direct loss in GHG reductions relative to what would have been saved with a uniform five percent annual emissions reduction across all classes, but also runs the risk of pushing production towards that larger end. Such a shift raises safety concerns as well. This concern applies across all large light trucks, including SUVs, even though difficulty in reducing emissions at a higher rate was alleged for large pickups only. According to agency projections (NOI TAR Appendix), pickups will account for only one-quarter of large truck sales in MY 2025. [EPA-HQ-OAR-2010-0799-9528-A2, p.5]

A recent analysis appearing in the journal *Energy Policy* concludes that the curves defining fuel economy standards for MY2011-2016 already create an incentive for upsizing, and as a result it will likely increase vehicle emissions by 5-15 percent (Whitefoot and Skerlos 2011). This analysis found that, assuming “consumer preferences for vehicle size, fuel efficiency, and acceleration performance are all at their midpoints,” the slope of light truck curve for MY 2014 would need to be reduced by ½ to avoid promoting vehicle upsizing. This result suggests that the proposed light truck curve for 2025, for example, will provide a strong incentive to upsize and will lead to major losses in benefits for the program. In order to avoid this outcome, the curves for 2025 and earlier years would need to be much flatter. Figure 1 shows the MY2014 light truck target curve and the flatter curve (dotted blue) that the Whitefoot and Skerlos analysis indicates would be necessary to avoid upsizing. The red curves represent the proposed MY2025 targets and a curve (dotted red) scaled down from the adjusted MY2014 curve, which could reasonably be taken to approximate the slope necessary to avoid upsizing in 2025. The difference in slopes

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between the two 2025 curves is very large. [EPA-HQ-OAR-2010-0799-9528-A2, p.5] [For Figure 1 please refer to EPA-HQ-OAR-2010-0799-9528-A2, p.6]

The integrity of the analytical basis for the standard depends upon a clear and consistent basis for the treatment of all vehicles. In the case of large light trucks, we find that i) the deviations from the analytical approach previously adopted are not justified with data provided in the NPRM, and ii) the resulting ad hoc adjustments to the curve-fitting process detract from the agencies' argument for their proposals. Thus, in addition to reducing the fuel and GHG savings that the rule will bring, the weakening of standards for large light trucks undermines the technical foundation for the rule going forward. The treatment of this issue in the NPRM and related documents unfortunately gives the impression that the analytical components of the development the target curves are subjective and can be used to justify a very wide range of outcomes. Introducing this degree of subjectivity to the technical analysis invites unnecessary challenges to the standard-setting process. [EPA-HQ-OAR-2010-0799-9528-A2, p.6]

Regardless of whether the agencies change the truck curve in the final rule, we believe that adjusting the analytical approach to yield curves satisfying certain policy considerations is inadvisable. It would be preferable to choose the most robust analytical approach, and then to make exceptions as needed for a limited period to accommodate those policy considerations, and to explain the targets in those terms. [EPA-HQ-OAR-2010-0799-9528-A2, p.6]

Inflating the slope of the truck is counterproductive from a policy perspective as well. The domestic auto industry owes its strength today in part to its having been induced by the federal government to improve fuel economy, which in turn has enabled it to better compete with the other manufacturers. These same domestic manufacturers, by demanding lenient treatment for a subset of their products, are repeating their earlier mistake and will suffer the consequences in the long run of slowing technological improvement of their large light trucks. [EPA-HQ-OAR-2010-0799-9528-A2, p.6]

We strongly support the agencies' plan to revisit the choice of curve-fitting options in the final rule (TSD p.2-44). [EPA-HQ-OAR-2010-0799-9528-A2, p.6]

Recommendations

- Do not apply the density adjustment to the reference fleet data before fitting the light truck curve. If necessary to ensure that towing and hauling capability is maintained, revisit the process of adding technologies to the reference fleet to ensure that only technologies consistent with the functional requirements of the vehicle are added.
- Starting in 2017, apply the same annual percentage reduction to light trucks as to cars. Restore the 66 square foot cutoff for MY 2017-2025 (Figure 2, dotted green).
- If no such changes are possible in the final rule, introduce a provision to ensure the standards do not promote upsizing as follows: once sales of light trucks of 66 square feet and above in a given year reach MY 2008 sales of pickups 66 square feet and above, the upper bound for the light truck targets should be fixed at the 66 square foot target (Figure 2, dotted purple). This would ensure that automakers do not increase sales volume at this

end by producing lower cost, inefficient vehicles. [EPA-HQ-OAR-2010-0799-9528-A2, pp.6-7] [For Figure 2 please refer to EPA-HQ-OAR-2010-0799-9528-A2, p.7]

Organization: American Honda Motor Co., Inc.

Honda is concerned that the relative stringency between small footprint light trucks and large footprint light trucks diverge dramatically from one another, and the stringency increases fall disproportionately on the smaller foot-print light trucks. One example is comparing the Omega package 807 and with package 1804. [See table on p. 1 of Docket number [EPA-HQ-OAR-2010-0799-9489-A1] [EPA-HQ-OAR-2010-0799-9489-A1, p. 1]

These similar technology packages respectively are applied to a small footprint light truck and a large footprint light truck. While the 2021 costs of these two package sets are relatively similar, with the cost/1% CO₂ reduction and flat costs both slightly higher for the smaller light truck, the increased stringency of the standards for these two vehicles are significantly dissimilar. A small footprint light truck such as the Honda CR-V (footprint of 44 square feet) has a proposed increased stringency of 18%, while a large truck, like a Ford F150 (footprint of 72.8 square feet) has a proposed increased in stringency of less than 5%. [EPA-HQ-OAR-2010-0799-9489-A1, p. 1]

This pattern repeats elsewhere within the light truck category, all showing that the stringency increases are falling disproportionately on small light trucks like the Honda CR-V and its competitors. [EPA-HQ-OAR-2010-0799-9489-A1, p. 2]

As noted above in #1, above, the stringency for the larger footprint light trucks is very low, compared to the smaller footprint light trucks. The combination of the lower stringency and the “game changing” credits cannot be justified as a matter of science, in furtherance of social goals and objectives or as a matter of simple fairness and equity. Not only are large footprint pick up trucks required to do very little (no stringency increase for a number of years), they are overly rewarded if they do increase their performance: in other words, required to do nothing, and highly rewarded for doing something. [This comment can also be found in section 5.1 of this comment summary.] [EPA-HQ-OAR-2010-0799-9489-A1, p. 2]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 119-120.]

EPA and NHTSA propose for the 2017 to 2025 periods to radically alter the light-duty truck curves from their '12 to '16 slopes. The agencies have proposed dramatically increased stringency for the smaller footprint truck and little or no stringent increases for the larger footprint trucks. Honda previously shared data with the agencies indicating that if any change were to be made to the curves, it was more appropriate to flatten out the curves or moderate the increase in stringency for the smaller footprint trucks and to increase the stringency for the larger trucks. In other words, Honda believes that smaller light trucks are being unfairly singled out for increases in their standards, especially compared to the larger vehicles. This obvious -- this is

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obviously because the smallest trucks will have an annual increase of around 4 percent while the largest truck will have an annual increase of less than 1 percent.

Subsequent to the publication of the NPRM, on December 7th, 2011, the University of Michigan issued a study by Whitefoot and Skerlos. Honda agrees with their conclusion. And I'm quoting: 'In the near term, the analysis suggests that the slope of the function determining fuel economy targets based on vehicle footprint should be flattened for both passenger cars and light trucks and even further for light trucks.

Additionally, the agencies' own data show this to be true. Simply looking at the EPA's and NHTSA's estimates for the compliance cost differences between passenger cars and trucks, both agencies estimate lower compliance costs for trucks than passenger cars, and this is primarily due to an imbalance in the light truck slope and a much more stringent burden being placed on the lower sales volumes of the smaller light trucks and little to no additional stringency being put on the larger light trucks.

EPA and NHTSA believe that full-sized pickup trucks have unique challenges in improving fuel economy and GHG emissions due to payload and towing requirements. Honda believes that vehicles other than full-size pickup trucks should receive similar consideration in preserving their utility. SUVs and minivans, for example, are often fully loaded by families resulting in expectations or coming from expectations of 7- or 8-passenger seating capabilities while maintaining payload and towing functionality. Similarly situated vehicles ought to be treated the same.

Organization: Anonymous Public Citizen 1

Close the loophole for SUVs. This rule will be only very mildly effective without that loophole being closed. [NHTSA-2010-0131-0231, p.1]

Organization: Association of Global Automakers, Inc. (Global Automakers)

A. Lower “cutpoint” of light truck standard curve

We note that the lower “cutpoint” of the truck standards curve is set at the same footprint point (41 square feet) as the passenger car standard. In our view, it would be more appropriate to set that cutpoint at the same sales point (i.e., representing approximately 10 percent of sales) as the passenger car curve. In this way, the same portion of the respective fleets would fall within the flat portions of the footprint curves. The same arguments advanced by the agencies in support of the selection of the lower cutpoint of the passenger car curve apply as well to trucks (small market segment, minimal incentive to downsize, possible disincentives for manufacturers to offer small vehicles if the curve continues to slope downward at the low end). See 76 Federal Register (FR) 74919. We believe that this change should be made for consistency of methodology and that it should have minimal impact on the standards for light trucks. Therefore, we recommend that EPA and NHTSA incorporate this change in the final rule. [EPA-HQ-OAR-2010-0799-9466-A1, p. 2]

Organization: Capozzelli, J.

The proposed rules allow light trucks to increase their fuel efficiency at a much slower rate than cars. For many years; this problem led automakers to build bigger vehicles so they could take advantage of these weaker standards, which caused efficiency standards in the United States to stagnate. We should not make the same mistake twice, and should strengthen the standards for light trucks on par with cars. We cannot afford to skew the rules in favor of gas-guzzling SUVs. [NHTSA-2010-0131-0221-A1, p.1]

Organization: Center for Biological Diversity

In setting maximum feasible fuel economy standards, Congress instructed NHTSA to prescribe separate standards for passenger and non-passenger vehicles based on one or more vehicle attributes related to fuel economy and to express each standard in the form of a mathematical function.⁴⁰ In the NPRM, the Agencies set forth separate targets based on vehicle size, or footprint. Using a projected make-up of the nationwide fleet, NHTSA estimates the average fuel efficiency for passenger cars and light trucks in each model year (MY).⁴¹ [EPA-HQ-OAR-2010-0799-9479-A1, p. 8]

[See Table 1 on p. 8 of Docket number EPA-HQ-OAR-2010-0799-9479-A1] [See Table 2 on p. 9 of Docket number EPA-HQ-OAR-2010-0799-9479-A1]

The fleet-wide fuel economy standards actually achieved in any year, however, depend on each individual manufacturer's choice of vehicles and production volume. Once a manufacturer determines its models and production volume for a MY, fuel economy standards for that manufacturer are determined using the attribute-based formula of the fleet that has been built during the year; every manufacturer must meet only the fuel economy standard that correlates to its own fleet mix. Because manufacturers control the size and number of the vehicles they produce, their choices also control their fuel economy targets, and the aggregate choice of all manufacturers determine the actual fleet-wide fuel economy achieved in any one year. [EPA-HQ-OAR-2010-0799-9479-A1, p. 9]

The proposed standards substantially and improperly favor light trucks, particularly the largest and least fuel efficient trucks, and they provide an economically compelling incentive to upsize vehicle footprint. Because the NPRM, without a backstop, creates a system that incentivizes manufacturers to produce larger, less fuel efficient vehicles, the Agencies' mileage projections – especially over a time span of a decade and a half – are likely to be wrong. These errors must be corrected in the final rulemaking. [EPA-HQ-OAR-2010-0799-9479-A1, p. 9]

1. The proposed increases for light trucks are back-loaded rather than ratable, contravening Congressional intent [EPA-HQ-OAR-2010-0799-9479-A1, p. 9]

As the tables above demonstrate, the standards the Agencies propose to set for light trucks are dramatically less stringent than the standards for passenger cars. While passenger cars' efficiency increases by 4.3% annually, the increase for light trucks is only 2.9%. In addition, the

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light truck standards increase at a significantly slower rate than the passenger car rate.⁴⁴ Together, the minimal increases for light trucks for the first four years of the covered period and the overall decreased stringency exacerbate the historical “advantage” enjoyed by SUVs and pickup trucks, delay gains in fuel efficiency for the overall fleet, and incentivize gamesmanship and an ever-increasing SUV loophole. [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

Title 49 U.S.C section 32902 requires NHTSA to prescribe “annual fuel economy standard increases that increase the applicable average fuel economy standard ratably.”⁴⁵ “Ratably” is defined as “in a proportional, well-proportioned or proportionate manner.”⁴⁶ In other words, the statute requires not only that fuel efficiency increase every year, but also that it do so proportionally. The legislative history of the provision demonstrates that Congress intended fuel economy standards to “make rapid and consistent annual progress.”⁴⁷ In requiring “ratable” increases, Congress sought “relatively consistent proportional increases in fuel economy standards each year.”⁴⁸ [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

Flatly contravening Congressional intent, the Agencies have proposed inconsistent, slow, and disproportionately small average fuel economy increases for light duty trucks during the first years of the covered period. They propose a mere .6 mpg average increase per year from 2017 through 2020. As further discussed below, this disproportionality is exacerbated by the fact that the heaviest “light” trucks are required to increase their fuel efficiency by the least amount. The increase then jumps to 2.1 mpg in 2021, a near four-fold increase, and stays in a higher range for the remaining rulemaking period – not coincidentally, the period when of time the Agencies propose for a de novo rulemaking review, an event that presents another chance for industry to convince the Agencies that the higher standards during the latter period of the rulemaking must once again be watered down.⁴⁹ These proposed average increases are neither rapid and proportional when compared to the increases proposed for passenger cars or to the later rulemaking period [see Tables 1 and 2] nor consistent given the sudden jump in 2021. The total percentage increase for trucks also is not consistent or proportional with the increase for passenger cars. Rather, light cars and trucks will be left even further behind passenger vehicles. The Agencies’ own interpretation of “ratable” contradicts their proposed treatment of light trucks. They interpret “ratable” to mean that “annual increases should not be disproportionately large or small in relation to each other.” Yet the Agencies propose minimal annual increases for the first part of the rulemaking, followed by a three- to four-fold jump after 2021. Rather than being rapid, consistent or proportional, the proposed light truck increases are overwhelmingly backloaded into later years. [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

The effect of allowing minimal efficiency increases early and demanding larger increases later is only to delay efficiency gains that could be achieved much sooner, at a much lower price. As we have frequently stated (see our comments to the DEIS), because greenhouse gases remain in the atmosphere for centuries and their warming effect is delayed for decades, it is essential to decrease their emissions as soon as possible; the benefits of avoiding the emission of a ton of carbon today by far exceed the benefits of avoiding the release of the same ton of carbon several years from now. The Agencies recognize this to some extent as they increase the social cost of carbon over time (though insufficiently so). Conversely, remedial efforts get more expensive the longer action is delayed. Even setting aside the triggering of catastrophic events by crossing tipping points and assuming *arguendo* that the social cost of carbon grows by no more than the

Agencies currently assume, it is undoubtedly vastly preferable to remove a given ton of carbon in year 1 rather than year 4, when it has wrought that much more damage. From the CAFE perspective, something similar can be said: the longer vehicles retain the same, rather than increased, fuel efficiency standards, the more fuel, a finite commodity that Congress mandates must be conserved, is wasted. Thus, the Agencies' failure to comply with the Congressional mandate to devise ratable fuel efficiency increases, and its decision to backload achievable gains instead, has the additional pernicious effect of increasing the rulemaking's cost. [EPA-HQ-OAR-2010-0799-9479-A1, p. 11]

The Agencies seek to justify the anemic annual rate of improvement for trucks by referencing the "unique challenges in improving the fuel economy . . . of full-size pick-up trucks, while preserving the utility of these trucks." Specifically, they explain that due to characteristics such as 4WD and towing and hauling capacity, "the vehicles in the current light truck fleet are generally less capable of achieving higher fuel economy levels as compared to vehicles in passenger car fleet." While this reasoning may address the fact that stringency for trucks is currently lower than that of cars, it does nothing to explain the lack of the required ratable annual increases – i.e., increases that are proportional, lead to rapid and consistent progress, and do not create incentives to upsize cars to light trucks and lighter trucks to heavier ones. [EPA-HQ-OAR-2010-0799-9479-A1, p. 11]

In any event, the explanation lacks merit. Studies show that trucks are indeed capable of maintaining towing and hauling capacity with higher fuel economy standards.⁵³ The claim that the "unique challenges" faced by trucks justify a slower and disproportional increase in fuel economy standards, or any of the other regulatory leniencies the Agencies provide for them in the NPRM, fails in light of the fact that technologies exist that fully enable trucks to improve fuel efficiency while retaining utilities like hauling and towing. [EPA-HQ-OAR-2010-0799-9479-A1, p. 11]

The Agencies also cite cost concerns as a reason for setting lower stringencies for trucks than for cars. This justification does not withstand scrutiny. It ignores that U.S. manufactured light truck models have been the most profitable vehicle for manufacturers since 1990. ⁵⁴ Moreover, in general, because small cars cost almost as much as large cars to design, build and distribute, small cars generate small gross margins, while light trucks earn manufacturers greater profit.⁵⁵ Ironically, the rulemaking demands the least from the most profitable segment of the automotive industry. This result is arbitrary and capricious, and contrary to law. [EPA-HQ-OAR-2010-0799-9479-A1, p. 11]

The Agencies further reason that the different standards for passenger cars and trucks will preserve consumer choice and "should not affect consumers' opportunity to purchase the size of vehicle that meets their needs."⁵⁶ As discussed above, although the Agencies can consider consumer demand, "it would clearly be impermissible for NHTSA to rely on consumer demand to such an extent that it ignored the overarching goal of fuel conservation."⁵⁷ The Agencies here have elevated purported consumer choice for larger, heavier, less efficient vehicles over energy conservation and thus violated Congressional intent. Moreover, this choice, improper in itself, cannot justify overriding the Congressional mandate to set fuel efficiency standards that increase

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ratably every year. As discussed below, manufacturers created consumer demand to use larger, less efficient, and more profitable light trucks as passenger vehicles,⁵⁸ and a wide range of consumer options exist in this category. Consumers who desire to purchase the most fuel efficient and least polluting vehicles, on the other hand, are left with far fewer options, and the U.S. is left in last place in passenger vehicle and light truck fuel economy. [EPA-HQ-OAR-2010-0799-9479-A1, p. 12]

We note here the Agencies' assertion that the NPRM "will not create significant incentives to produce vehicles of particular sizes, and thus there should be no significant effect on the relative availability of different vehicle sizes in the fleet due to the proposed standards, which will help maintain consumer choice during the rulemaking timeframe." This assertion is insupportable. Lower efficiency standards for trucks have caused their manufacture and sale to balloon for decades, and these differences would be exacerbated by the proposed rule, which goes so far as to demand almost no increases of the most inefficient and polluting vehicles in the fleet. The fact that incentives for upsizing would be created simply cannot be disputed. The Agencies come close to admitting this fact: "[A] steeper slope [in compliance curves] relaxes the stringency of targets for larger vehicles relative to those for smaller vehicles, thereby shifting relative compliance burdens among manufactures based on their respective product mix." Indeed. And a further shift to the least efficient vehicles in the fleet is inevitable. [EPA-HQ-OAR-2010-0799-9479-A1, p. 12]

Moreover, we strongly disagree with the Agencies' belief that their regulatory efforts should have no effect (and have no effect) on consumer choice or market forces that drive auto sales in general. It is EPCA and EISA's very purpose to change those forces toward the conservation of energy. And, in the context of their safety discussion, even the Agencies admit that, "[f]or fullsize (i.e. 3/4- and 1-ton) pickups, risk increases as mass increases." Thus, the more heavy vehicles are built, the more risk. Far from having no effect on consumer choice and market forces, the NPRM proposes regulations that will create the market forces that drive increased production of the least energy efficient vehicles on our highways. [EPA-HQ-OAR-2010-0799-9479-A1, pp. 12-13]

Creating different (and for some years, next to no) efficiency standards for the heaviest trucks also plays havoc with the footprint-based attribute system the Agencies have, until now, staunchly defended. Tellingly, the Agencies admit as much – they state that they had rejected allowing different standards for light pickup trucks based on different attributes, such as power, because doing so would introduce 'multi-attribute standards' that the Agencies had "judged . . . to be more subject to gaming than a footprint-only standard." Influenced by industry comments, they abandoned that previously-held line in the sand because the "challenges faced by manufacturers of large pickups currently outweigh[] these prior concerns." As shown above, however, the "challenges" allegedly facing these most profitable and least energy efficient vehicles in the fleet are bogus. If abandoning the footprint-based attribute system to create this loophole was a price for the "agreement" between the regulators and the regulated in July 2011, it was too high a price to pay. [EPA-HQ-OAR-2010-0799-9479-A1, p. 13]

The Agencies' decision to backload increases in fuel efficiency for trucks – as well as for passenger vehicles, though to a lesser extent – is arbitrary and capricious. That trucks historically

have been exempted from proportional efficiency increases does not justify continuing the practice and so as to exacerbate the efficiency inequality between the two types of vehicles throughout the covered period, providing even more incentive for manufacturers to produce more “light trucks.” Moreover, letting consumer choice trump fuel conservation violates the statute. A ratable footprint curve for light trucks that contains proportional annual increases and is proportional to the passenger car curve is necessary to comport with Congressional intent. [EPA-HQ-OAR-2010-0799-9479-A1, p. 14]

2. The NPRM creates an SUV loophole that is contrary to Congress’ purpose in enacting EPCA – energy conservation

The National Academy of Sciences (“NAS”) found that from 1970 to 1982, CAFE standards helped contribute to a 50 percent increase in fuel economy for new light trucks.⁶⁸ This progress soon stalled, however. Light trucks became ever more popular in the ensuing decades because less stringent CAFE standards for light trucks provided incentives for manufacturers to invest in vehicles like SUVs and minivans and to promote them to consumers.⁶⁹ NAS found that this market shift had a “pronounced” negative effect on overall fuel economy.⁷⁰ [EPA-HQ-OAR-2010-0799-9479-A1, p. 14]

The NPRM would continue and exacerbate this market shift. Light trucks are disproportionately favored in the NPRM; starting off with lower fuel efficiency targets, their targets increase at a lower rate than passenger cars, and the heaviest and dirtiest light trucks are near-exempt during the first two years of the covered period, making them even more profitable. The Agencies repeatedly claim that the attribute-based standards discourage changes in vehicle size.⁷¹ Focused on safety concerns that have now been largely dispelled, the Agencies state that attribute-based standards are laudable because they prevent manufacturers from gaming the system by building too many light vehicles.⁷² That concern, however, has no basis in fact: historically it is the SUV segment, not the segment for small and efficient cars, which has shown the largest growth. The manufacture of too many fuel efficient cars sadly has never been the problem. Instead, the NPRM incentivizes the manufacture of too many gas guzzlers. [EPA-HQ-OAR-2010-0799-9479-A1, p. 15]

3. The NPRM must require ratable fuel efficiency increases for all light trucks

As shown in the tables above, the Agencies provide an estimate of the average fuel economy standards per year for all light trucks. In fact, however, the Agencies are proposing the smallest increases for the largest and dirtiest trucks for the first two years of the covered period. ⁷³ [EPA-HQ-OAR-2010-0799-9479-A1, p. 15]

Not only does this proposal quite obviously remove any incentive to improve the gas mileage of these largest vehicles, it may also result in an additional statutory violation. Given the long lead-time between the final rule and 2017, manufacturers have substantial time to adjust to this scheme by manufacturing larger light trucks with less stringent fuel economy standards. Because the actual national fuel efficiency level is determined not by the standards themselves but by what manufacturers decide to build, it is possible that this predictable shift toward larger, less

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fuel efficient cars could prevent the nationwide fleet from reaching the statutory minimum of 35 mpg in 2020.⁷⁴ The near-exemption for larger trucks must be dropped for this reason alone. [EPA-HQ-OAR-2010-0799-9479-A1, p. 15]

4. The NPRM should tighten the definition of light trucks to prevent incentives to reclassify

As has been recognized for some time, because there are separate curves for passenger cars and light trucks, manufacturers have incentives to reclassify passenger cars as light trucks to render them subject to less stringent fuel economy goals.

The EPCA defines passenger automobiles as follows: [EPA-HQ-OAR-2010-0799-9479-A1, p. 15]

[A]ny automobile that the Secretary decides by regulation is manufactured primarily for transporting not more than 10 individuals, but does not include an automobile capable of off-highway operation that the Secretary decides by regulation –

(A) has a significant feature (except 4-wheel drive) designed for offhighway operation; and

(B) is a 4-wheel drive automobile or is rated at more than 6,000 pounds gross vehicle weight.⁷⁵ [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

Light trucks are defined by exclusion as automobiles that are not passenger automobiles or work trucks.⁷⁶ NHTSA has further defined light trucks as automobiles with greater cargo-carrying than passenger-carrying volume, and as automobiles that permit expanded use of the automobile for cargo-carrying purposes through removal of seats or stowing of foldable seats.⁷⁷ [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

This statutory definition can already incentivize upsizing as it allows manufacturers to add 4WD technology plus any other “off-highway” feature to a vehicle to automatically fall within the less stringent light truck classification. The Agencies themselves recognize that this incentive exists if the fuel economy standard for a truck with a given footprint is less stringent than that for passenger car with the same footprint.⁷⁸ The issue is particularly significant where a vehicle is built with both a 4WD and a 2WD version. The 2WD drive version, if it does not otherwise qualify as a truck, is subject to the passenger car curve. The same version with 4WD and some other off-road feature such as higher ground clearance, however, becomes subject to the truck curve. These circumstances create different fuel economy standards for vehicles with the same footprint. Manufacturers thus have incentive to redesign 2WD vehicles by adding 4WD and some off-road feature. The even greater disparity in mileage standards between trucks and passenger cars created by the NPRM provides even larger incentives for this type of abuse of the statutory scheme. [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

The Agencies have addressed this concern by noting that “despite comments in prior rulemakings suggesting that any vehicle that appears to be manufactured ‘primarily’ for transporting passengers must be classified as a passenger car, the statute as currently written clearly provides that vehicles that are off-highway capable are not passenger cars.”⁷⁹ Congress,

however, intended that “passenger automobiles be defined as those used primarily for the transport of individuals.”⁸⁰ And, as the Ninth Circuit noted, “many light trucks today are manufactured primarily for transporting passengers.”⁸¹ Indeed, “[c]onsumers use light trucks primarily for passenger-carrying purposes in large part because that is precisely the purpose for which manufacturers have manufactured and marketed them.”⁸² EPCA’s drafters surely never intended manufacturers to be able to manipulate their products for the sole purpose of escaping higher efficiency standards. Accordingly, the Agencies must remove the SUV loophole. Moreover, we urge the Agencies to create a single footprint for both passenger vehicles and light trucks because that change would eliminate the gamesmanship that has played out historically and is sure to continue without it. [EPA-HQ-OAR-2010-0799-9479-A1, pp. 16-17]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 214-216.]

Rather than promoting technological innovations, these rules rely on small improvements in existing technology. And, also, rather than pushing industry to make more efficient smaller vehicles, these rules create what we’re calling an SUV loophole by incentivizing industry to build more trucks and SUVs that won’t have to increase their fuel efficiency standards at the same rate as passenger vehicles. And those are our three very big points of concerns for us in these rules.

And the result of these problems with the rules are they actually could end up with an increase in overall greenhouse gas emissions from our transportation center rather than a decrease.

So in regards to what we would like to see done in the final rule, we would like to see these rules significantly strengthened.

One of our main concerns is the fact that the proposed rules allow light-duty trucks and SUVs to increase their fuel efficiency at a much slower rate and pace than cars, and for many years this problem has caused automakers to build bigger vehicles so they could take advantage of these weaker standards that have caused our efficiency to stagnate behind the efficiency across the world.

And we should not make the same mistake twice; we should strengthen those standards for light-duty trucks and put them on a par with cars, and we can’t afford to skew the rules in favor of more gas-guzzling SUVs and light trucks.

40 See 49 U.S.C. 32902(b)(3)(A). [EPA-HQ-OAR-2010-0799-9479-A1, p. 8]

41 See Tables 1 & 2. [EPA-HQ-OAR-2010-0799-9479-A1, p. 8]

44 Compare Tables 1 & 2. [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

45 49 U.S.C. § 32902(b)(2)(C)(emphasis added). [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

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46 Webster's Online Dictionary, <http://www.websters-online-dictionary.org> (Search 'rateably') (last visited Feb. 9, 2012). [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

47 153 Cong. Rec. H16659, 16750 (emphasis added) (daily ed. Dec. 19, 2007). [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

48 Id. (emphasis added). [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

49 See Table 2. [EPA-HQ-OAR-2010-0799-9479-A1, p. 10]

53 See Ricardo, Inc., Computer Simulation of Light-Duty Vehicle Technologies for Greenhouse Gas Emission Reduction in the 2020-2025 Timeframe, EPA-420-R-11-020, at 66-67 (Nov. 29, 2011). [EPA-HQ-OAR-2010-0799-9479-A1, p. 11]

54 Max Warburton, et al., Bernstein Research, "Euro Autos: What Are the 10 Most Profitable Cards of Modern Times?", p. 4 (Nov. 15, 2011) (concluding that the top ten most profitable vehicles of modern time are led by pick-up trucks manufactured by Ford and GM, due to the large volume sold and because they have not undergone frequent technology upgrades). [EPA-HQ-OAR-2010-0799-9479-A1, p. 11]

55 Id. at 2. [EPA-HQ-OAR-2010-0799-9479-A1, p. 12]

56 NPRM, 76 Fed. Reg. at 74,860. The Agencies' overemphasis of consumer choice also overlooks the fact that each consumer's choice of a low-efficiency vehicle affects the overall fleet's standards and thus decreases the benefits to society as a whole. The statutes set fuel efficiency standards that counteract individual choices that prevent energy conservation. [EPA-HQ-OAR-2010-0799-9479-A1, p. 12]

57 CBD v. NHTSA, 538 F.3d at 1195 (quoting Center for Auto Safety v. NHTSA, 793 F.2d 1322, 1338 (D.C. Cir. 1986)). [EPA-HQ-OAR-2010-0799-9479-A1, p. 12]

58 See CBD v. NHTSA, 538 F.3d at 1207. [EPA-HQ-OAR-2010-0799-9479-A1, p. 12]

68 National Research Council. Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards, p. 14, Washington, DC: The National Academies Press, 2002. [EPA-HQ-OAR-2010-0799-9479-A1, p. 14]

69 Id. at 18. The fact that domestic manufacturers faced less competition in this category and could generate greater profits also contributed to the growth in SUV production. [EPA-HQ-OAR-2010-0799-9479-A1, p. 14]

70 Id. at 19. [EPA-HQ-OAR-2010-0799-9479-A1, p. 14]

71 See, e.g., NPRM, 76 Fed. Reg. at 74,875; 74,913. According to Kate S. Whitefoot and Steven J. Skerlos, "NHTSA constructed the foot-print based CAFE standards using a quantitative analysis but did not study whether manufacturers would have an incentive to change vehicle size

as a result of the standards”. See Kate S. Whitefoot and Steven J. Skerlos, Design Incentives to Increase Vehicle Size Created from the U.S. Footprint-Based Fuel Economy Standards, 41 ENERGY POLICY 402, 403 (2012). [EPA-HQ-OAR-2010-0799-9479-A1, p. 15]

72 Indeed, the Agencies admit that safety considerations that could support any provision of a disincentive for downsizing as a compliance strategy “apply weakly, if at all, to the very largest vehicles.” 76 Fed. Reg. 74918. [EPA-HQ-OAR-2010-0799-9479-A1, p. 15]

73 See NPRM, 76 Fed. Reg. at 74,872, Figure 5-2. Through 2021, the annual fuel economy increase for light trucks is 4.0% for the smallest trucks, 2.3% for larger SUVs, and only 0.4% for the largest pickup trucks. [EPA-HQ-OAR-2010-0799-9479-A1, p. 15]

74 “Increasing vehicle footprint leads to a reduction in fuel economy and acceleration performance of the vehicle due to the increase in vehicle weight.” Whitefoot, 41 ENERGY POLICY at 404. [EPA-HQ-OAR-2010-0799-9479-A1, p. 15]

75 49 U.S.C. § 32901(a)(18). [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

76 See id. at (a)(17). [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

77 49 C.F.R. 523.5(4)-(5). [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

78 See NPRM, 76 Fed. Reg. at 75,337. [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

79 NPRM, 76 Fed. Reg. at 75,337, n. 218. [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

80 See 68 Fed. Reg. 74,908, 74926 (Dec. 29, 2003). [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

81 See *CBD v. NHTSA*, 538 F.3d at 1207. [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

82 Id. at 1208. [EPA-HQ-OAR-2010-0799-9479-A1, p. 16]

Organization: Chrysler Group LLC

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 54.]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 60-61.]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 26.]

Chrysler agrees with setting the truck performance requirements based on the underlying physics of these types of vehicles. We believe the proposed 2017 through 2025 standards support this

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premise and correct the deficiencies in the 2016 model year rule, which overlooked these factors. The 2017 to 2025 truck standards are challenging while respecting the utility of these vehicles and their importance to the nation's economy.

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 54.]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 61.]

The truck standards for 2012 through '16 model year were not supported by fundamental science. Accommodating that science will seem to be restricted by statutory direction to not backslide on standards from previous years.

Organization: Consumers Union

It is counterintuitive and counterproductive to let the least fuel efficient models improve more slowly than more efficient models, and Consumers Union recommends that the light truck standard should be made more stringent, particularly in the cross-over range. A delta of 10-15 mpg by 2025 between passenger cars and light trucks of the same footprint is unreasonable, given the range of technologies and designs available for improving fuel economy. The gap in the proposed standards grows over time because light trucks are required to improve at a lesser rate, in addition to being subject to lower targets in absolute terms. [EPA-HQ-OAR-2010-0799-9454-A2, p.6]

IV. A stricter standard would deliver even greater consumer benefits

The proposed standards will likely save consumers billions of dollars and provide additional national security and environmental benefits. However, a higher CAFE target is achievable and would save consumers even more money on fuel at a reasonable investment cost. Especially given the regulatory flexibility and discrepancy between real-world and test results, a higher CAFE target is both achievable and desirable. [EPA-HQ-OAR-2010-0799-9454-A2, p.6]

As noted in prior comments, Consumers Union believes that allowing manufacturers to avoid stringent fuel economy standards by reclassifying passenger vehicles as light trucks as a way to game the system erodes consumer and oil saving benefits.¹⁸ The current proposal's use of footprint-based curves that require vehicles of all size to improve in fuel economy is a significant improvement from letting light trucks off the CAFE hook. Indeed, vehicle "footprint" is a desirable attribute on which to base standards, for reasons noted in on pages 115-116 of NHTSA's Preliminary Regulatory Impact Analysis (PRIA). However, the gap between the curves is too large, especially in the cross-over SUV (approximately 42-50 sf) segment. [EPA-HQ-OAR-2010-0799-9454-A2, p.6]

There are several strong indicators that the gap between the curves is too large. First, the cost-per-vehicle to achieve the proposed standards is much lower for light trucks (\$1,500) than for passenger cars (\$1,950). This significant discrepancy indicates that light trucks have additional

room for improvement at a reasonable cost. In addition, since passenger cars tend to be cheaper than light trucks, light trucks get off even easier in terms of compliance cost as a percentage of purchase price. [EPA-HQ-OAR-2010-0799-9454-A2, p.6]

Secondly, fuel economy savings are logarithmic, so allowing a lower percentage of improvement for vehicles that already have the lowest mpg is counterproductive for maximizing fuel savings and other benefits. The greatest potential for fuel savings is at the least efficient end of a fleet, but the vehicles at the bottom are provided the least stringent targets, even as a percentage of their current dismal performance. Third, the large gap provides a greater incentive to game the system by altering a vehicle to put it in the light truck category (increasing clearance or adding 4WD). For some vehicles, the compliance cost could be less than simply altering the vehicle to switch categories. Adding all-wheel or four-wheel drive does not generally warrant the extra leeway afforded under the proposed rules, especially in the cross-over market segment.¹⁹ [EPA-HQ-OAR-2010-0799-9454-A2, p.7]

Negative consequences could result from the large gap. Cross-over vehicles are a growing market segment, and allowing cross-over vehicles to be counted in the light truck category significantly boosts a manufacturer's achieved CAFE average for light trucks. As a result, the larger and heavier vehicles will not need to make as much improvement as they would otherwise, even though the greater investment needed to make these improvements in the larger vehicles is the reason for a segmented standard in the first place. If the growing cross-over trend continues, the large gap between the curves will have deleterious effects on projected consumer savings and oil reduction.²⁰ [EPA-HQ-OAR-2010-0799-9454-A2, p.7]

As long as the light truck-passenger vehicle distinction remains in place, our recommended course of action is to alter the slope and floor values of the compliance curves so that there is less incentive to switch categories and to preserve the projected consumer savings. At the very least, the gap between the curves should be narrowed for the cross-over segment, and the gap should decrease, instead of increase, over time. The Union of Concerned Scientists has done extensive analysis on this topic, and we agree with their analysis and conclusion that a "backstop" would be an effective tool to preserve expected consumer savings and prevent exploitation of loopholes. If the agencies do not address this potential problem in the current rulemaking, we would urge them to perform rigorous analysis of this issue during the mid-term review to make sure that consumer benefits are indeed on track and that potential savings are not being squandered through manipulation of the standard. [EPA-HQ-OAR-2010-0799-9454-A2, p.7]

18 - See Appendix F: 'Comments of Consumers Union of the U.S., Inc. In response to Advance Notice of Proposed Rulemaking Docket No. 2003-16128 on Reforming the Automobile Fuel Economy Standards Program.'

19 - See Appendix G Comparison of Price and Operating Costs for 2WD and 4WD for real world examples of fuel economy differences between 2WD and AWD/4WD.

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20 - NHTSA notes on page 71 of the PRIA that indeed, the market is expected to shift towards light trucks.

Organization: Ford Motor Company

The truck standards previously established for the 2012-2016 model years underestimated the unique challenges posed by the standards for the larger trucks, which have unique loadcarrying and towing capabilities that can be compromised by the fuel efficiency improvements more successfully applied on smaller vehicles. The current proposal will better enable manufacturers to develop and apply fuel economy technologies to light trucks without sacrificing the utility for which these vehicles are designed. [EPA-HQ-OAR-2010-0799-9463-A1, pp. 2 and 5]

Heavier pick-up trucks are expected to deliver even more cargo carrying and towing capacity not required from passenger vehicles. Such vehicles are used by consumers and small business owners for activities such as towing or hauling construction goods and machines, farm goods, landscape material, lawn maintenance equipment, home furnishings, animals, vehicles and trailers. Ford survey data shows up to 82% of F-150 customers use their vehicles for hauling. Up to 41% haul on at least a monthly basis; and 72% of F-150 customers use their vehicles for towing. Up to 28% tow on at least a monthly basis. [EPA-HQ-OAR-2010-0799-9463-A1, p. 8]

To achieve this capability, vehicles equipped with trailer tow packages include additional features that clearly distinguish them from passenger cars, and can negatively impact fuel economy: [EPA-HQ-OAR-2010-0799-9463-A1, p. 8]

In the proposal, EPA makes reference to the fact that it “underestimated the impact of the different pickup truck model configurations” in the model year 2012-2016 rule, and that the “very largest light trucks have significant load-carrying and towing capabilities that make it particularly challenging for manufacturers to add fuel economy-improving/CO₂-reducing technologies in a way that maintains the full functionality of those capabilities.” (76 Fed. Reg. 74919). We agree with this observation. The 2012-2016 truck standards did not fully account for the consumer-driven attributes of larger trucks, which, due to the technology trade-offs discussed above, created particular challenges for full-line truck manufacturers. [EPA-HQ-OAR-2010-0799-9463-A1, p. 10]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 45-46.]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 35.]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 87.]

In particular, EPA acknowledged it had underestimated the impact of the different pickup truck model configurations in the model year 2012 to 2016 rule. They further acknowledged that the ‘very largest light trucks have significant load-carrying and towing capabilities that make it

particularly challenging for manufacturers to add fuel economy-improving technologies in a way that maintains the full functionality of those capabilities.' We concur with the agencies' analysis and conclusions.

Organization: International Council on Clean Transportation (ICCT)

The proposed 2022-25 standards would set consistent improvements for all cars and light trucks, with annual CAFE increases of 4.7% per year and annual GHG reductions of 5.0% per year. However, both EPA and NHTSA proposed a lower annual rate of improvement for light-trucks in the early years of the program. EPA is proposing an annual GHG reduction for cars of 5%, but only 3.5% for light trucks. Similarly, NHTSA is proposing an annual fuel economy increase of 4.3% for cars, but only 2.9% for light trucks. The required reductions for light trucks are also tilted, such that the smallest light trucks have larger increases (but still less than cars), while the larger light trucks have smaller increases. Figure 4 illustrates this effect. The annual fuel economy increases from 2016 to 2021 for cars is almost flat and ranges from 4.2% to 4.4%. The annual fuel economy increase for light trucks starts at 4.0% for the smallest trucks, drops to 2.3% for larger SUVs, and falls off to only 0.4% for the largest pickup trucks. Note that the 2012-16 standards also imposed smaller increases on the larger vehicles than they did on smaller vehicles. [Figure 4 can be found on p. 49 of Docket number EPA-HQ-OAR-2010-0799-9512-A1] [EPA-HQ-OAR-2010-0799-9512-A1, pp. 48-49]

Footprint systems are designed to encourage the use of lightweight materials (unlike weight-based standards) without affecting the mix of vehicles sold in the market. Under a footprint-based system, selling more small vehicles does not necessarily help manufacturers meet the standards, as smaller vehicles are subject to more stringent targets. However, the slope of the footprint curve and the difference between the car and light truck curves matter. The steeper the slope of the footprint curve, the more incentive manufacturers have to increase the size of their vehicles. And the larger the difference between the car and light truck curves, the more incentive a manufacturer has to add four-wheel drive and jack the vehicle up just enough to meet the ground clearance criteria so that the vehicle can be reclassified as a light truck. These are perverse incentives, as increasing the size of the vehicle or reclassifying cars as light trucks makes it easier for a manufacturer to meet the requirements while also increasing the fuel consumption and CO₂ emissions from the vehicle. [EPA-HQ-OAR-2010-0799-9512-A1, p. 49]

The tilt in the increase in light truck stringency, as illustrated in Figure 4, increases the incentive for manufacturers to increase the size of light trucks, especially pickup trucks. [Figure 4 can be found on p. 49 of Docket number EPA-HQ-OAR-2010-0799-9512-A1] [EPA-HQ-OAR-2010-0799-9512-A1, p. 49]

More importantly, the lower requirements for all light trucks would increase the incentive to reclassify cars as light trucks. As illustrated in Figure 5, the 2012-2016 standards and the 2022-2025 standards have almost no impact on the relationship between the stringency of the car and the light truck targets. However, during the 2017 to 2021 timeframe, when the annual efficiency gains for light trucks are much lower than for cars, the difference in stringency between cars and trucks grows dramatically. As proposed, the 2017-2021 standards will increase the incentive to

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reclassify cars as light trucks, with a small additional incentive for the smallest cars and gradually increasing for larger cars. Fortunately, few cars have a footprint larger than about 54 sq.ft at present. [Figure 5 can be found on p. 50 of Docket number EPA-HQ-OAR-2010-0799-9512-A1] [EPA-HQ-OAR-2010-0799-9512-A1, p. 50]

Single footprint curve

The proposed rule maintains separate footprint curves for cars and light trucks. This subjects light trucks with the same footprint to much less stringent standards and gives manufacturers a tremendous incentive to reclassify cars as light trucks. In the future it is likely to cause manufacturers to drop many 2wd versions of their small SUVs and make less efficient 4wd versions standard, so that they can be classified as light trucks instead of cars. This will actually increase overall real world fuel consumption and CO₂ emissions in two ways. First, it will increase 4wd installation and directly increase the fuel consumption of the fleet. Second, it makes it easier for manufacturers to meet the standards, so that they do not have to implement as much technology on other vehicles. [EPA-HQ-OAR-2010-0799-9512-A1, p. 50]

The large majority of light trucks today are based on car platforms with unibody construction. All minivans use unibody construction and cab-and-chassis construction for SUVs is rapidly disappearing. Except for pickup trucks, full-size cargo vans, and a few relatively low volume SUVs, such as the Jeep Wrangler and the Suburban, in the 2017-25 timeframe of the rule all light trucks will be based on car platforms. In addition, due to the empty pickup bed and empty cargo box, pickup trucks and cargo vans are considerable lighter than SUVs with the same footprint and fit well on a single footprint line. Thus, there is no technical reason to maintain separate footprint lines for cars and light trucks. [EPA-HQ-OAR-2010-0799-9512-A1, pp. 50-51]

EPA recognized the importance of this issue when it established a single Tier 2 emission standard for all cars and light trucks. The issue here is just as important. It is time to begin the process to end this artificial distinction between cars and light trucks for fuel efficiency and greenhouse gas emissions. The ICCT recommends a single footprint function, which will still give larger trucks a less stringent target to meet, while avoiding vehicle classification games and helping to ensure fuel consumption and GHG emission goals are actually met. [EPA-HQ-OAR-2010-0799-9512-A1, p. 51]

Organization: Mass Comment Campaign (20,500) (Union of Concerned Scientists-3)

The proposed standards for light trucks are significantly weaker than for cars. In the past, automakers made vehicles bigger to qualify for weaker standards. Light truck standards should be strengthened to prevent automakers from gaming the system. [EPA-HQ-OAR-2010-0799-10166-A2_MASS, p.1]

Organization: Mass Comment Campaign (375) (Union of Concerned Scientists-2)

The proposed standards for light trucks are significantly weaker than for cars. In the past, automakers made vehicles bigger to qualify for weaker standards. Light truck standards should

be strengthened to prevent automakers from gaming the system. [EPA-HQ-OAR-2010-0799-1246-A1_MASS, p.1]

Organization: Mass Comment Campaign (4,505) (Unknown Organization)

The proposed rules allow light trucks to increase their fuel efficiency at a much slower rate than cars. For many years, this problem led automakers to build bigger vehicles so they could take advantage of these weaker standards, which caused efficiency standards in the United States to stagnate. We should not make the same mistake twice, and should strengthen the standards for light trucks on a par with cars. We cannot afford to skew the rules in favor of gas-guzzling SUVs. [EPA-HQ-OAR-2010-0799-9595-A1_MASS, p.1]

Organization: Mass Comment Campaign (9,570) (Unknown Organization)

The proposed standards for light trucks are significantly weaker than for cars. In the past, automakers made vehicles bigger to qualify for weaker standards. Light truck standards should be strengthened to prevent automakers from gaming the system. [EPA-HQ-OAR-2010-0799-9578-A1_MASS, p.1]

Organization: National Association of Clean Air Agencies (NACAA)

First, NACAA understands that EPA and NHTSA are proposing that passenger cars have an average rate of improvement of 5 percent for MYs 2017 to 2025. However, light-duty trucks will start with an average rate of improvement of 3.5 percent for MYs 2017 through 2021 and 5 percent for MYs 2022 through 2025. These proposed rates of improvement are envisioned to result in an average CO₂ emissions rate of 163 grams per mile (g/mile) with an average fleet performance of 54.5 miles per gallon (mpg) if every manufacturer incorporates enhanced engine technologies. In addition, the proposal provides only a conditional approval of the standards by NHTSA for MY 2022 to 2025 vehicles. [EPA-HQ-OAR-2010-0799-8084-A1, p. 3]

NACAA supports EPA's and NHTSA's goal of a fleetwide performance that will result in 54.5 mpg fuel efficiency. We are concerned, however, that the approach taken in the proposal may undermine achievement of this goal. In fact, in a recently published study, researchers at the University of Michigan consider whether allowing a more lenient 3.5-percent rate of improvement requirement for larger vehicles creates an incentive for the manufacture of larger vehicles to the extent that it could lower the overall fleet performance standard by as much as four miles per gallon, thus undermining the goal of a 54.5-mpg fuel economy standard.¹² Accordingly, NACAA urges EPA and NHTSA to ensure that the full measure of the reductions envisioned by EPA and NHTSA is achieved. In addition, NACAA requests that EPA and NHTSA respond to the issues raised in the University of Michigan study. [EPA-HQ-OAR-2010-0799-8084-A1, p. 3]

[These comments were also submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 39-40.]

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[These comments were also submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 34-35.]

¹² Kate S. Whitefoot and Steven J. Skerlos, “Design Incentives to Increase Vehicle Size Created from the U.S. Footprint-based Fuel Economy Standards,” January 2012, available at http://designscience.umich.edu/alumni/katie/Whitefoot_Skerlos_Footprint.pdf. [EPA-HQ-OAR-2010-0799-8084-A1, p. 3]

Organization: Natural Resources Defense Council (NRDC)

NHTSA should revise truck definitions to reduce the incentive for cars to be reclassified as trucks and take advantage of a less stringent compliance regime. [EPA-HQ-OAR-2010-0799-9472-A2, p. 3]

2. Fuel Consumption and Pollution Reductions are Undermined by Large Gap between Car and Truck Curves; Agencies Should Revise Truck Definitions to Prevent Gaming

The large gap between the car and light truck curves creates an incentive that threatens to undermine the predicted oil and GHG reductions of the program. Automakers could have a strong incentive to modify vehicles classified as cars today to be reclassified as trucks because the truck curve has substantially less stringent compliance levels for the same footprint. NHTSA previously recognized that many crossover vehicles had been inappropriately classified as trucks. Starting with MY 2011, NHTSA required two-wheel drive crossovers that were previously subject to truck fuel economy standards to be shifted to the car fuel economy compliance requirements. NHTSA estimated that over a million vehicles required reclassification from trucks to cars.³³ It is our concern that many automakers will modify vehicles or shift sales from crossovers currently on the car curve to the truck curve. [EPA-HQ-OAR-2010-0799-9472-A2, p. 10]

One way to make the curve shift is by the addition of four-wheel drive (4WD) capability. Adding four-wheel drive technology could classify a car into a truck yet have minimal impact on the actual fuel efficiency and emissions of the vehicle. By making the shift, a vehicle was previously complying with the car curve would immediately overcomply on the truck curve. The automaker’s decision to add 4WD capability will largely be influenced by whether or not the cost to add the 4WD technology is less than adding the fuel efficiency and emissions technology necessary to stay compliant on the car curve. [EPA-HQ-OAR-2010-0799-9472-A2, p. 10]

Consider the case of the popular Toyota RAV4 crossover and compliance with GHG emission standards. With a footprint of 44.6 square feet (ft²), the two-wheel drive RAV4 car requirement in 2016 is 223 g/mi. Adding 4WD will increase emissions by about 5 g/mi to 228 g/mi. If reclassified as a truck, the 4WD RAV4 would subject to less stringent compliance standards and at 228 g/mi, it would meet the MY 2020 requirement for trucks at the 44.6 ft² footprint. [EPA-HQ-OAR-2010-0799-9472-A2, p. 10]

By immediately complying with the MY 2020 standard, Toyota could avoid adding technologies to cut emissions from 2016 to 2020, and save approximately \$1000. If Toyota can add 4WD technology for less than \$1000, then they would have an incentive to shift RAV4 models from car classification to truck classification. The difference in MSRP between 2WD and 4WD models of the 2012 RAV4 is \$1400 but actual costs could be less than \$1000. [EPA-HQ-OAR-2010-0799-9472-A2, p. 10]

NHTSA and EPA should reduce the incentive to reclassify vehicles from the car to truck curves. The gap between the car and truck curves should be reduced, especially for footprints of crossovers similar to the RAV4. The emissions and fuel efficiency difference between 2WD and 4WD crossovers on the market today is often less than 10 g/mi yet the car and truck curves differ by over 40 g/mi. The agencies should also revise truck definitions to better distinguish truck-only capabilities. For example, trucks should be required to have technologies that are necessary for true off-road capability vs. typical all-wheel on-road driving. [EPA-HQ-OAR-2010-0799-9472-A2, p. 10]

33 74 FR 14196 at 14204. [EPA-HQ-OAR-2010-0799-9472-A2, p. 10]

Organization: Nissan North America, Inc.

The standards applicable to the light-duty truck fleet for MYs 2022-2025 are particularly challenging. Especially for automakers with more limited volumes in the light truck segment, the cost feasibility of implementing more advanced technology is limited. As manufacturers re-evaluate their commitment to these market segments, the broad industry-wide investment in truck technologies that can be spread through the industry is uncertain. Moreover, the willingness of the market to absorb substantial additional costs to ensure achieving the proposed standards is questionable as the light-duty truck segment is a cost-sensitive market. [EPA-HQ-OAR-2010-0799-9471-A1, p.8]

Organization: RVIA

RVIA has commented in the past on the importance of considering towing when setting future GHG and CAFE standards for full size pickups. RVIA is pleased to see that the proposed standards for full size pickups do indeed take towing into consideration and we therefore support the standards proposed for the 2017-2021 model years. However, we are concerned that the costs associated with the standards proposed for the 2022-2025 model years could potentially hurt full size pickup truck sales. This would in turn have a negative effect on sales of towable RVs because when a person shopping for a new towable RV cannot afford to buy the vehicle capable of towing it, they will not purchase the RV. [EPA-HQ-OAR-2010-0799-9550-A2, pp.1-2]

Organization: Salinas, A.

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SUVs are being allowed to improve gas-mileage standards later than passenger vehicles, and that has spurred the production of even more SUVs. These standards leave the United States behind Europe, Japan, and China in fuel efficiency. [EPA-HQ-OAR-2010-0799-7119-A1, p. 1]

Auto makers are being coddled into taking only baby-steps to improve already-existing technology. We are much better than that. At this pace, 2025 will not see much more fuel-efficiency than what some cars already have. By 2025 the United States should do better than the European Union, China and Japan, not continue to lag behind them. [EPA-HQ-OAR-2010-0799-7119-A1, p. 1]

We need better, stronger rules to make real progress in the fight to reduce greenhouse gas emissions and improve fuel efficiency, and we need for SUVs to be made adhering to the same standards as passenger vehicles. [EPA-HQ-OAR-2010-0799-7119-A1, p. 1]

Organization: Sierra Club, Environment America, Safe Climate Campaign, and Clean Air Council

Take steps to address weaker standards for light trucks: Closing the gap between cars and trucks has been a long-term concern for our organizations. We remain deeply concerned about the lower rate of improvement the light truck curve requires overall, driven by the much less stringent curve at the large footprint end of the light truck spectrum. The EPA is proposing lower annual emissions reductions of 3.5 percent per year for MY 2017-2021 light duty trucks. NHTSA is also proposing a low annual increase in fuel economy for light trucks for the first phase of standards which include MY 2017-2021 to be 2.9 percent per year on average (even lower for larger light trucks). The proposed rule presumes that additional increases will be achievable after 2021 – 5% emissions reductions for trucks and 4.7% annual efficiency improvements. This treatment results in the direct loss of greenhouse gas reductions relative to reductions that would have been achieved with a uniform 5% annual emissions reduction across all classes, and may undermine the benefits of the program. The lower rate of improvement in the early years could undermine the mid-term review and achieving the long term stringency of the National Program. [EPA-HQ-OAR-2010-0799-9549-A2, p. 6]

The agencies are continuing to use an attribute based curve for model years 2017-2025. While the car curve is the same as from the 2012-2016 standards, the agencies are changing the light truck curve. The proposed changes will increase the slope and extend the large footprint cut off point to larger footprints. By increasing the slope the rule will create an incentive to upsize vehicles that would continue through MY2025. The agencies consider this factor in the NPRM, noting that a “steeper footprint based standards may incentivize vehicle upsizing, thus increasing the risk that the fuel economy and greenhouse gas reduction benefits will be less than expected. Extending the slope part of the target curve will have adverse consequences for both emissions and safety. [EPA-HQ-OAR-2010-0799-9549-A2, p. 6]

We appreciate the agencies efforts to structure a program to encourage and reward application of “game-changing” hybrid technology to the largest pickups. To limit the impact of the proposed curves and treatment of light trucks, even with the incentive program in place, we recommend that the agencies provide an alternate emissions target for light trucks of 60 sq. feet and above

that exceed the sales projected in the rule. This alternate emissions target will come into effect in the year that sales exceed the projected sales in the rule. By setting an alternate emissions target level representing a 4.8 percent annual reduction from the maximum 2016 truck target of 349 g of CO₂ per mile, automakers will be discouraged from increasing sales volumes at this end by producing lower cost and inefficient vehicles. [EPA-HQ-OAR-2010-0799-9549-A2, p. 6]

The gap between average car and truck emissions would widen due to the differing rates of improvements for cars and trucks under the proposed standards. This may further encourage manufacturers to reclassify certain large-footprint cars as trucks and/or change the balance of two-wheel drive and four wheel-drive SUV production, reducing the emissions benefits of the 2017-2025 standards. [EPA-HQ-OAR-2010-0799-9549-A2, p. 6]

In the past, the light truck loophole resulted in manufactures producing greater numbers of trucks. We are concerned that in the early years of the program automakers will take advantage of the weaker standards for light trucks, which will make it difficult to produce higher efficiency vehicles in the later years of the program setting automakers up for failure. [EPA-HQ-OAR-2010-0799-9549-A2, p. 7]

Automakers are already gearing up to take advantage of this loophole. A New York Times article reported in 2011 that sales of larger vehicles were up by 28.5% compared to an increase in car sales of 7% from 2010 sales in the same month.²² [EPA-HQ-OAR-2010-0799-9549-A2, p. 7]

Therefore we also urge the agencies to revisit the light truck definition as set by NHTSA in the 2011 fuel economy rule to further discourage reclassification of cars as trucks and substitution of two wheel drive with four wheel drive SUVs, simply to avoid the more stringent car standards. [EPA-HQ-OAR-2010-0799-9549-A2, p. 7]

22 <http://www.nytimes.com/2011/02/02/business/02auto.html>

Organization: Smith, Frank Houston

Data is also available for 1472 UK Light 4X4s, Pickups, and Vans rated Euro Step IV Emissions and above at <http://vanfueldata.dft.gov.uk/Default.aspx>. [NHTSA-2010-0131-0240-A1, p. 3]

There are currently 402 Euro Step V certified vans and pickups ... only 9 gasoline, 14 CNG, and 379 diesel fueled configurations with gross weights capabilities from 1690 up to 4,560 kg providing fuel economies from 19.5 to 78.3 mpg(Imperial) combined based on the NEDC test cycle. [NHTSA-2010-0131-0240-A1, p.3]

Organization: South Coast AQMD

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 69.]

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In addition, we want to emphasize that additional assurances are needed to ensure that the overall fleet performance of 5 percent is met. The proposal rule allows light-duty trucks produced in 2017 to 2021 to improve at a rate of only 3.5 percent. If sales of light-duty trucks during this time period exceeds expectations, then the overall fleet performance will be further reduced.

In addition, the use of early credits may lead to the production of light-duty vehicles that do not necessarily have to meet the 5 percent improvement rate.

Organization: Toyota Motor North America

Nonetheless, we remain concerned about two aspects of the proposed standards. First, the targets for trucks require a lower average rate of improvement than for cars. And second, the targets for larger trucks require a lower average rate of improvement than smaller trucks. In fact, the target curves for the largest trucks remain flat for several years before increasing at all. This discrepancy is exacerbated by the availability of several credit opportunities - discussed later in these comments - that are applicable to certain large trucks at the exclusion of all other market segments. [EPA-HQ-OAR-2010-0799-9586-A1, p.5]

Organization: Union of Concerned Scientists (UCS)

Though I strongly support these standards, I am concerned about possible loopholes that automakers could exploit. Specifically: The proposed standards for light trucks are significantly weaker than for cars. In the past, automakers made vehicles bigger to qualify for weaker standards. Light truck standards should be strengthened to prevent automakers from gaming the systems. [EPA-HQ-OAR-2010-0799-9713-A2, p. 2]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 218-219.]

We're also very concerned that significantly weaker standards for light trucks could give automakers an incentive to reclassify passenger vehicles as non-passenger vehicles.

For example, the gap of roughly six to ten MPG exist between car and light truck target stringencies in the footprint range seen by many crossover vehicles.

This gap is much larger than the fuel economy loss a crossover would face from adding four-wheel drive, which could enable it to qualify it for a weaker standard as a non-passenger vehicle.

Gaming of the system like this will cut down on the anticipated program benefits giving the sizable and growing popularity of the crossover vehicle segment. The agencies cannot afford to dismiss this issue.

Organization: United Automobile Workers (UAW)

In particular the UAW supports the aspects of the proposals that recognize the importance of balancing the challenges of adding fuel-economy improving technologies to the largest light

trucks with the need to maintain the full functionality of these vehicles across a wide range of applications. [EPA-HQ-OAR-2010-0799-9563-A2, p.2]

Organization: Volkswagen Group of America

d. Requires unequal % CO₂ reductions across the truck fleet --large trucks are benefited with minimal requirements; [EPA-HQ-OAR-2010-0799-9569-A1, p. 6]

Volkswagen maintains our original position that 4% per year for both cars and trucks has the most potential to create a balanced, effective proposal. Further, our suggestion is that the 4% reduction be equally applied to all sizes of vehicles within each compliance category. EPA claims that the average truck stringency for 2017-2025 is approximately 3.5% per year. This is less than the average reduction suggested by Volkswagen. In addition the 3.5% is a broad characterization of the burden being applied to the truck category as a whole. Volkswagen points out that upon closer examination the 3.5% is not equally applied across the whole category. As illustrated in Table 2-7, it is clear that large light trucks are provided significantly lower percent reduction stringencies when compared to the projected average sized truck, or a small truck with a footprint closer to the lower curve cut-point. [See Table 2-7 on p. 19 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 18]

This is especially evident within the first several years of the program when the stringency for larger trucks hovers around or even less than 1%. The least efficient vehicles offered in the market will be given at three years before any significant increases in efficiency are required. [EPA-HQ-OAR-2010-0799-9569-A1, p. 19]

The result is inequitable compliance obligations for various types of trucks. Figure 2-8 illustrates the decreasing CO₂ targets in g/mile CO₂ for trucks at the lower and upper footprint ranges. The dashed lines illustrate a forward trending projection of the 2012-2016 stringencies carried forward into the 2017-2025 timeframe. [See Figure 2-8 on p. 19 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 19]

In general for the smaller trucks, the reductions for 2017-2025 are roughly in line with the reduction trend from 2012-2016. However, for the larger light trucks, the proposed targets deviate away from the 2012-2016 trend line becoming less stringent on a percent basis. The blue shaded area is a representation of the pullback in the stringency provided for these vehicles. Further, the green shaded area in Figure 2-8 includes the additional credits available explicitly to 'game changing' full-size pick-up trucks that compose the majority of vehicles populating this footprint range, i.e. the full-size trucks credits. These credits further expand the area of the shaded region, increasing the gap between small and large trucks even further. [EPA-HQ-OAR-2010-0799-9569-A1, p. 20]

It is important to note that the top two selling vehicles for 2011, the Ford F150 and Chevrolet Silverado, with combined sales of nearly 1 million vehicles (approximately 8% of the entire US market light duty market) will be eligible to reside within the blue and green region of Figure 2-8. [EPA-HQ-OAR-2010-0799-9569-A1, p. 20]

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The shaded region in Figure 2-8 not only represents competitive inequity, but also lost opportunity for CO₂ reduction from the very segment of the fleet with the highest emissions. Volkswagen acknowledges that vehicles within this footprint range may feature duty-cycles which may preclude adoption of certain fuel saving technologies or features, i.e. heavy duty towing or off-road capability. This however is not a unique challenge limited to vehicles with larger footprints. Smaller SUVs or trucks in some cases may feature near equal capability and consumers are no less demanding to this segment versus others. [EPA-HQ-OAR-2010-0799-9569-A1, p. 20]

Some stakeholders have claimed that the latter half of the 2012-2016 rule created an excessive stringency on larger light trucks, and that these vehicles were somehow more challenged than other vehicles. The lower stringency being proposed for 2017-2025 is intended to provide 'breathing room' to allow time for the larger trucks to catch up with the requirements. Volkswagen disagrees. We again refer to Table 2-7 which clearly shows for 2012-2016 that larger trucks already benefited from lower percent requirements compared to less-emitting smaller trucks and SUVs. In addition, the RIA indicates that a leading full-size truck already available in 2011 is close to being compliant with standards for the 2017+ timeframe. [EPA-HQ-OAR-2010-0799-9569-A1, p. 20]

Table 3.12-1 in the EPA RIA showcases vehicles which are at or near compliance with the 2017+ expected targets. Included in this list is a non-hybridized version of a large pick-up truck which remains the number one selling vehicle in the US, selling over 500,000 units per year. EPA's data indicates that the 2011MY of this vehicle achieves 372 g/mi and has about a 4% gap from complying with its 2017 targets. EPA included assumptions regarding A/C credit usage in making this determination. [EPA-HQ-OAR-2010-0799-9569-A1, p. 20]

Volkswagen created an internal model to project the CO₂ performance of this vehicle. The model disaggregated the sales into various powertrain and wheelbase (affects footprint) combinations as shown in Figure 2-9. For simplification, all the pathways are not shown. The model then applies publically available EPA fuel economy and CO₂ emissions data for each of the resulting pathways and compares them with the resulting footprint target which varies based on wheelbase. Some of the combinations earn credits, while others earn debits. The compliance of the model as a whole was then determined assuming credit transfer amongst the powertrain/footprint combinations. [See Figure 2-9 on p. 21 of Docket number EPA-HQ-OAR-2010-0799-9569-A1] [EPA-HQ-OAR-2010-0799-9569-A1, p. 20]

The RIA compares current model year performance with the expected footprint target for 2017 and beyond. For this sample vehicle, EPA claims that the truck will fall short of its target by 4%. This assumes that the vehicle receives no fuel saving technology upgrades from 2011 to 2017. Volkswagen's calculations confirms the claim that the stringency imposed on this vehicle by the 2012-2016 program indeed is challenging in the later years and results in a debit for 2015 and 2016. However, it should be noted that the vehicle earns credits in 2012 and 2013 sufficient to cover the debits in 2015 and 2016. Regardless, the credits would be consumed and the vehicle still faces a shortfall beginning in 2017. [EPA-HQ-OAR-2010-0799-9569-A1, p. 21]

What is important to consider is that the RIA shortfall assumes no application of fuel saving technology from 2011 to 2017, a full seven years. Volkswagen exercised the model by using two pathways to apply fuel saving technology. The first was to apply an average annual improvement for each model year, using the average of 1-2% per year as has been claimed in the past as a reasonable annual improvement in fuel economy. The other pathway recognizes that improvements may not necessarily be made on an annual basis and instead are applied in incremental steps at regular redesign intervals. For this pathway Volkswagen applied a suite of low-cost technologies⁴ to the vehicle using EPA assumed costs and effectiveness and waited until 2017 to make the update. This provides a five year design cycle assuming the sample truck was potentially redesigned in 2011. An additional application of technologies is made in 2022, again providing for a 5-year design cycle. The approach results in an average year-over-year reduction of 1.2%. [EPA-HQ-OAR-2010-0799-9569-A1, p. 21]

Furthermore, Volkswagen refrained from assuming any adoption of HEV technologies for this vehicle. Assuming that the minimum deployment thresholds are met, this would have triggered the 'game changing' technology credit of 10 or 20 g/mi CO₂ depending on the degree of hybridization. Volkswagen did not include the HEV incentive because the model showed that the credits were simply not needed. Either of the conventional technology pathways provided significant compliance margins resulting in the pick-up truck generating credits throughout most of the 2012-2025 timeframe. The HEV incentive would have only 'piled on' to the credits being earned resulting in a windfall for this vehicle. Unless the credits were needed in another segment of the fleet, they would not be worth the investment required to earn them. [EPA-HQ-OAR-2010-0799-9569-A1, p. 21]

However, EPA has stated in the NPRM that it is their understanding that credits will only be transferred from cars to trucks and not vice-versa. Therefore, one can expect limited to no hybridization of this full-size truck. This does create doubt regarding the need to create the full-size truck credit incentive for 'game-changing' technologies. [EPA-HQ-OAR-2010-0799-9569-A1, p. 22]

Modest application of conventional technologies to full-size pick-ups, coupled with the benefit of low annual CO₂ reduction requirements, more than provides for a comfortable compliance margin for this segment of the fleet. Volkswagen questions why the other segments of the truck fleet, let alone the car fleet, must then be taxed with the role of carrying the more significant CO₂ reduction burden? [EPA-HQ-OAR-2010-0799-9569-A1, p. 22]

As discussed in Section 2.7, Volkswagen predicts that credits will be accumulated within the large truck and full-size truck segment due to the combination of lower stringency and segment exclusive benefits. Should this occur, then the fundamental premise upon which the reduced stringencies and unique credits are based will need to be reevaluated. [EPA-HQ-OAR-2010-0799-9569-A1, p. 27]

On the other hand, the NPRM and other stakeholders have claimed that large trucks face the most challenging reductions. Volkswagen disagrees. However, even if this proves to be true, then large trucks would be at or above their CO₂ g/mi targets, and would be mired in debits.

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Credits earned by this segment simply would not exist. Therefore there is no need for non-existent credits to be bankable or transferable to other segments. [EPA-HQ-OAR-2010-0799-9569-A1, p. 27]

Either way, large trucks, by claiming to be more uniquely challenged than any other segment of vehicles covered by this regulation are being afforded significant benefits not awarded anywhere else. It is therefore reasonable that the agency confine the reach of the benefit within the large truck segment which is demanding it. What is unreasonable is to claim such a degree of excessive hardship as to warrant less than one-fifth the stringency requirement of other segments and then expect that benefit to be transferable. [EPA-HQ-OAR-2010-0799-9569-A1, p. 27]

2 EPA projects the average footprint for trucks at approximately 53.5 sq-ft for MY2017-2025.

3 The upper cut-point of the Light Truck curve changes throughout 2017-2025, therefore VW used 72 sq-ft as a representation of vehicles near or above the upper cut-point. This is the footprint of a major large pick-up truck representative of vehicles within this class.

4 The technologies include electric power steering (EPS) + improved accessories (IAAC1) + aggressive shift logic (ASL-1) + low rolling-resistance tires (LRRT) + and low-drag brakes (LDB). Total cost was less than \$300 and VW expects that this selection of technologies is neither complicated by synergy effects nor degrades towing and off-road capability, except possibly for the LRRT which may then be an option. MY2022 applies level-1 mass reduction (MR-1) and a high efficiency gearbox (HEG).

Organization: Weiner, L.

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 107.]

Additionally, in the early years of the proposed standards, pickup trucks are not required to improve with the same rate as passenger cars, but there are incentives for manufacturers to apply advanced technologies to pickup trucks. So it's critical that the efficiency of the trucks not lag behind cars.

Organization: Whitefoot, K. and Skerlos, S.

The analysis also indicates that the incentive to upsize is greater for light trucks than for passenger cars, encouraging a further divergence of the sizes of these two classes. [EPA-HQ-OAR-2010-0799-9447-A1, p. 1]

The slope for the light truck curves should be flattened by a larger percentage than the slope of the passenger car curves to reduce the incentive to upsize light trucks to a larger extent than passenger cars. [EPA-HQ-OAR-2010-0799-9447-A1, p. 1]

Minimum standards for light trucks should be set at a high-enough level to ensure that fuel economy improvements in the total fleet are close to projected levels even if the production of light trucks increases relative to passenger cars. [EPA-HQ-OAR-2010-0799-9447-A1, p. 1]

Furthermore, the fuel economy curve for light trucks should be flattened to a larger extent than the passenger car curve to reduce the incentive to upsize light trucks even further than passenger cars, thereby increasing the divergence of vehicle size between these two classes. [EPA-HQ-OAR-2010-0799-9447-A1, p. 2]

Unfortunately, the proposed rule increases the risk of backsliding by making the MY2017-2025 light truck curves steeper than the MY2011-2016 curves. These steeper curves further raise the incentives to produce more light trucks overall (compared to passenger cars) and more large light trucks (compared to small light trucks). NHTSA and EPA state that the light truck curve was made steeper because large pickup trucks would be less capable of achieving further improvements in fuel efficiency without compromising load carrying and towing capacity. However, because the standards are fleet average standards, no specific vehicle must meet its target as specified by the curve. Therefore, efficiency improvements in smaller light trucks could offset the difficulties of improving fuel efficiency of larger light trucks. We encourage NHTSA and EPA to revise the light truck curves so that the risks of upsizing are reduced. [EPA-HQ-OAR-2010-0799-9447-A1, p. 2]

Response:

2.2.4. Backstop Standards

Organizations Included in this Section

Alliance of Automobile Manufacturers
 Center for Biological Diversity
 Mercedes-Benz USA, LLC
 Natural Resources Defense Council (NRDC)
 Sierra Club, Environment America, Safe Climate Campaign, and Clean Air Council
 Toyota Motor North America
 Union of Concerned Scientists (UCS)
 Whitefoot, K. and Skerlos, S.

Organization: Alliance of Automobile Manufacturers

Backstop Standards [EPA-HQ-OAR-2010-0799-9487-A1, p.87]

The NPRM requests comments on whether minimum CAFE levels (so called “backstop standards”) should be adopted for import passenger car and light duty truck fleets. The need for backstop standards had been assessed during the MY 2012-16 GHG and fuel economy standards regulatory process. The agencies noted that substantial comments had been provided on both

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sides of the issue, but in the end determined that backstop standards would not be necessary. That decision was primarily based on the confidence the agencies had in their fleet modeling and the lack of incentives for manufacturers to “game” their product line-up in such a way to undermine the anticipated gains of the program. [EPA-HQ-OAR-2010-0799-9487-A1, p.87]

Concerns about backstop standards that were raised by the Alliance in the context of the MY 2012-2016 rules remain in place today. The concept of backstop standards is inconsistent with Reformed CAFE, which is intended to allow manufacturers to build the full range of vehicles that consumers demand. Backstop standards are unlikely to come into play in the first place, but if they did, they could have the effect of unduly limiting consumer choice and hampering the industry’s ability to achieve the goals of continuing the national program as cost-effectively as possible. Further, we continue to believe that NHTSA does not have legislative authority to adopt backstop standards for the import passenger car and light duty truck fleets. [EPA-HQ-OAR-2010-0799-9487-A1, p.87]

Notwithstanding NHTSA's previous decision to forego backstop standards, the question whether backstop standards should be reassessed in the context of the MY 2017-2025 rulemaking is raised on the basis that NHTSA “recognize[s] that given the time frame of the current rulemaking, the agency cannot be as certain about the unlikelihood of future market changes.” [EPA-HQ-OAR-2010-0799-9487-A1, p.87]

The Alliance concurs that there is increasing uncertainty with respect to market conditions, technological advances, consumer demand, etc., as we look further and further into the future. It is this uncertainty that gave rise to the mid-term evaluation provisions, which we believe are an essential element of the MY 2017-2025 National Program rules. Any necessary adjustments to the standards based on market shifts or other unforeseen developments should be addressed pursuant to the mid-term evaluation process (for EPA) and the concurrent process of setting final, enforceable CAFE standards (for NHTSA). Apart from that, it is not helpful or desirable to layer additional requirements on top of the Reformed CAFE standards, since this would only serve to reduce flexibility and add complexity to the manufacturers' product planning efforts. We therefore oppose any consideration of additional backstop standards at this time and recommend that the agencies rely on the mid-term evaluation and the CAFE standard-setting process as their primary means for making any necessary adjustments to the stringency and structure of the program. [EPA-HQ-OAR-2010-0799-9487-A1, pp.87-88]

Organization: Center for Biological Diversity

D. NHTSA Should Adopt a Backstop to Ensure the Nationwide Fleet Moves Towards Greater Fuel Efficiency.

As noted above, the rulemaking is currently structured so that the fuel economy standard actually reached in each MY depends entirely on each manufacturer’s fleet mix during that year. If manufacturers shift towards a greater percentage of light trucks, or increase the size of their vehicles to trigger less stringent fuel economy standards, the overall fuel efficiency of the nationwide fleet will decrease. But Congress tasked NHTSA with prescribing ratable fuel economy standards for passenger automobiles and light trucks, not with merely estimating them.

Attribute-based standards “plus a backstop would prevent manufacturers from upsizing their vehicles or producing too many large vehicle footprint vehicles, if the backstop were set high enough.”⁸³ We believe that, without a backstop, the NPRM does not comply with the statutory mandate to prescribe ratable increases, particularly given the free pass for the largest trucks and the added incentive to shift toward the least efficient vehicles. The Center proposes that the Agencies adopt a backstop to rein in shifts towards manufacturing larger vehicles and to ensure the standards continue to move the nationwide fleet towards energy conservation. [EPA-HQ-OAR-2010-0799-9479-A1, p. 17]

NHTSA has resisted adopting a backstop for years, despite losing the argument in *Center for Biological Diversity v. NHTSA*. In that case, the court observed, “Petitioners raise well-founded concerns (given the historical trend) that a floating feet mix-based standard would continue to permit upsizing – which is not just a function of consumer demand, but also a function of manufacturer’s own design and marketing decisions.”⁸⁴ The court found that NHTSA had not considered fuel conservation in deciding not to adopt a backstop, and had not shown that a backstop would be either technologically infeasible or economically impractical. It remanded the rulemaking with instructions for NHTSA to “reconsider under the proper standard whether to adopt a backstop based on the factors in the statute.”⁸⁵ [EPA-HQ-OAR-2010-0799-9479-A1, p 17]

In subsequent rulemakings, NHTSA justified its continuing refusal to set a backstop based on various reasons, including its belief that it could successfully prognosticate fleet mix shifts, that its footprint attribute-based standard would prevent gamesmanship and backsliding, that the lack of lead time and a growing preference for smaller cars weighed against adopting a backstop, and that backstops created inequitable burdens on manufacturers who exceeded the backstop.⁸⁶ However, the Agencies did recognize the potential need for a backstop in the current NPRM: “[W]e recognize that given the time frame of the current rulemaking, the agency cannot be as certain about the unlikelihood of future market changes. Depending on the price of fuel and consumer preferences, the ‘kind of industry-wide situation’ described in the MYs 2012– 2016 rule is possible in the 2017–2025 time frame, particularly in the later years.”⁸⁷ [EPA-HQ-OAR-2010-0799-9479-A1, pp 17-18]

The Agencies are correct. They cannot possibly predict future market changes or “consumer preference” with any degree of certainty over a period spanning some 14 years. Moreover, the justifications NHTSA provided in the MY 2011 and MY 2012-2016 final rules for failing to adopt backstops are incorrect or no longer apply, and do not in any event consider the relevant statutory factors as required by *CBD v. NHTSA*. [EPA-HQ-OAR-2010-0799-9479-A1, p 18]

First, the hypothesis that the attribute-based system does not provide an incentive to increase the size of vehicles has been refuted by studies showing the opposite. In fact, considering multiple variables, including consumer preferences, a recent study of the MY 2012- 2016 final rulemaking concluded that under most scenarios, the attribute-based standards “create an incentive to increase vehicle size that undermines gains in fuel economy.”⁸⁸ In all but two simulations, “the sales-weighted average vehicle size increases by 2–32%, undermining gains in fuel economy by 1–4 mpg (0.6–1.7km/L). Carbon-dioxide emissions from these vehicles are 5–

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15% higher as a result . . . which is equivalent to adding 3–10 coal-fired power plants to the electricity grid each year. Furthermore, results suggest that the incentive is larger for light trucks than for passenger cars, which could increase traffic safety risks.”⁸⁹ Moreover, the same study found that the incentive to increase vehicle size is greater for light trucks than for passenger cars due to the larger impact of the CAFE standards for light trucks on manufacturers’ profits: “Because the light truck standard causes larger profit losses than the passenger car standard, firms increase the sales-weighted average footprint of light trucks more than passenger cars.”⁹⁰ Thus, the Agencies’ claim that the attribute-based standards serve as backstops and prevent backsliding is simply incorrect. The already existing incentives to upsize would now be substantially increased. Without a backstop, it is not credible to assume that the fleet will not shift to lower efficiency vehicles. [EPA-HQ-OAR-2010-0799-9479-A1, p 18]

Second, the claim of insufficient lead time to adjust to backstops is inapplicable to the MY 2017-2025 NPRM. Manufacturers will have unprecedented lead time to adjust their future fleets to the new regulations. The amount of lead time also refutes the argument that the backstop will create an inequitable burden on manufacturers currently above it: this problem can be remedied in the intervening years. [EPA-HQ-OAR-2010-0799-9479-A1, p 18]

Lastly, the Agencies have not based their refusal to implement a backstop on any analysis of the statutory factors they must consider: technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need for the United States to conserve energy.⁹¹ We believe that none of the first three factors could be cited as a reason for foregoing a backstop, while the latter convincingly demands one. In short, the Agencies must supply annual or at least periodic backstops to comply with statutory mandates and dissuade manufacturers from “gaming” the attribute-based curves and avoiding implementation of fuel saving technology. [EPA-HQ-OAR-2010-0799-9479-A1, pp 18-19]

We also note that the NPRM allows manufacturers to rely on a variety of flexibilities and credits, discussed below, to meet annual fuel economy standards. The Agencies prognosticate that these features will decrease actually achieved mileage by less than 3 mpg by 2025 (see further discussion of credits below); but given the long time span covered by the rulemaking, this prediction is, by necessity, highly uncertain. A backstop would also ensure that the various credits and flexibilities will not be abused to the detriment of fuel conservation. [EPA-HQ-OAR-2010-0799-9479-A1, p 19]

We agree with the Agencies’ approach to extend exemptions only to small businesses as defined by the Small Business Administration and to limit the small volume manufacturers’ exemption to business with U.S. annual sales of less than 5,000 vehicles. Given the long lead times of the current rulemaking, no further exemptions are warranted. [EPA-HQ-OAR-2010-0799-9479-A1, p 19]

Congress has effectively set a backstop of 35 mpg in 2020 for the overall fleet. The Agencies’ estimated fuel economy standards, however, demonstrate that the fleet can more than meet this standard; it can exceed it before 2020 even under the preferred alternative. In setting the maximum feasible standards, the Agencies should prescribe annual or at least periodic backstops

designed to move the fleet to higher standards based on maximum feasible levels. [EPA-HQ-OAR-2010-0799-9479-A1, p 19]

83 See *CBD v. NHTSA*, 538 F.3d at 1204.

84 *CBD v. NHTSA*, 538 F.3d at 1206.

85 *Id.*

86 See, Average Fuel Economy Standards Passenger Cars and Light Trucks Model Year 2011, 74 Fed. Reg. 14,196, 14,412 (March 30, 2009); see also Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule 75 Fed. Reg. 25,324 25,368-70 (May 7, 2010).

87 NPRM, 76 Fed. Reg. at 75,228.

88 See Whitefoot at 41 ENERGY POLICY 402, 410 (2012).

89 *Id.* at 402.

90 See *id.* at 409.

91 See *CBD v. NHTSA*, 538 F.3d at 1205.

Organization: Mercedes-Benz USA, LLC

Minimum 'Backstop' Standards for Imported Passenger Cars and Light Trucks

NHTSA once again raises the possibility of minimum 'backstop' CAFE standards for the imported passenger car and light truck compliance categories. Such 'backstop' standards, however, are both contrary to NHTSA's statutory authority and inconsistent with the Congressional mandate to regulate fuel economy through an attribute based program. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-18]

When amending the EPCA in 2007, Congress both mandated the use of an attribute-based program for the CAFE program and created a backstop for the domestic passenger car fleet. NHTSA construes the fact that Congress did not include the other compliance categories as legislative 'silence.' However, the fact that Congress included only the domestic passenger car fleet is determinative evidence that Congress intended not to allow a backstop to be applied to the imported passenger car fleet or the light truck fleet. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-18]

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This is especially true where, as here, the imposition of a backstop is inherently inconsistent with attributes standards. The attribute based system was established as a replacement for a corporate average system with one numeric requirement. The proposed standards are aggressive and will require extensive technology adoption and market advancements for manufacturers to meet them. Manufacturers have no incentive to 'backslide.' The development of a trading market, moreover, creates a yet further incentive to continue to advance, especially in light of the overall stringency of the standards, because doing so creates a valuable and marketable asset. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-18]

There is no reason for the agencies to consider a backstop in the context of an aggressive and carefully constructed attribute based program. Congress continued the concept of a minimum standard for the domestic passenger car compliance category and made it clear through omission that such a backstop standard was not intended to be applied to the other compliance categories. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-18]

Organization: Natural Resources Defense Council (NRDC)

EPA and NHTSA should establish manufacturer-specific 'backstop' standards to ensure that environmental objectives are not undermined by shifts in sales mix and average vehicle size. [EPA-HQ-OAR-2010-0799-9472-A2, p. 4]

E. Compliance and Enforcement Requirements

1. GHG Standards Need 'Backstop' Standards to Ensure Environmental Objectives Are Not Undermined by Shifts in Sales Mix

The proposed GHG and fuel economy standards lack a regulatory 'backstop' mechanism to ensure that the 2025 fleetwide average emission level reaches 163 g/mi and that the targeted cumulative greenhouse gas and oil consumption reductions are met. Such mechanisms are necessary because under an attribute-based system that has separate car and light truck standards, the fleet sales mix could shift to larger, higher-emitting vehicles and to a greater proportion of light trucks, resulting in greater fleetwide emissions and oil consumption. [EPA-HQ-OAR-2010-0799-9472-A2, p. 17]

Achieving the pollution and oil reduction goals of the program are dependent on the overall market achieving the agencies' forecasted sales and size mixes. To reach a fleetwide average of 163 g/mi and 49.6 mpg in MY 2025, the agencies have set the individual car and light truck standards on the assumption of a specific car/light truck sales split. However, if the automakers shift their product mix to more light trucks or if they change the vehicle designs to classify fewer models as cars and more models as light trucks, this car/light truck split would be changed and the GHG and oil savings goals of the program would be undermined. [EPA-HQ-OAR-2010-0799-9472-A2, p. 17]

To prevent intentional and unintentional market shifts from undermining the environmental and oil savings benefits of the National Program, we recommend EPA and NHTSA adopt manufacturer-specific backstops on the combined car and light truck standards that bar an

individual automaker from exceeding its forecast GHG emission levels by more than 2 gCO₂-equivalent/mi and forecast fuel economy levels by approximately 0.5 mpg. Manufacturer-specific backstop standards would ensure that specific manufacturers can be held accountable if the overall fleet emission targets are missed. A manufacturer should be allowed no more than three years to make up any exceedance in its manufacturer-specific backstop standard. [EPA-HQ-OAR-2010-0799-9472-A2, p. 17]

Organization: Sierra Club, Environment America, Safe Climate Campaign, and Clean Air Council

As we did in our comments on the 2012-2016 standards, we urge both agencies to consider including what we consider necessary “backstops” to the program. The draft rule fails to include measures sufficient to ensure that the fleet-wide targets in the rule are met. The draft rule relies upon attribute-based curves, whose efficacy will vary with the composition in the fleet. As currently written the draft rule would allow shifts in fleet composition to undermine greenhouse gas and oil reduction targets. A “backstop,” in the form of a hard fleet-wide limit under-girding the attribute curves, should be incorporated in the final rule to insure that the program meets President Obama’s stated goals. [EPA-HQ-OAR-2010-0799-9549-A2, p. 5]

Both NHTSA and EPA are granted broad authority and stern directives to incorporate backstop regulatory structures into fuel efficiency rules. For example, NHTSA is required to promulgate fuel efficiency regulations in terms of absolute standards, as opposed to mere targets that may or may not be by the regulatory program.¹⁵ Similarly, EPA is directed under the Clean Air Act to take measures to that pollution from vehicles is actually prevented.¹⁶ Rules promulgated under EPA authority, accordingly, should not be undermined by increasing vehicle footprint to dilute the overall intent and benefit of the standards. [EPA-HQ-OAR-2010-0799-9549-A2, p. 5] [EPA-HQ-OAR-2010-0799-9549-A2, p. 5]

Here, achievement of the target fuel economies and greenhouse gas reductions depend on the mix of vehicle classes on the road in the U.S. years in the future. The law governing both NHTSA and EPA requires that the uncertainty in those targets be resolved into enforceable standards through employment of a backstop. The draft rule should be revised to include such a backstop before it becomes final. Backstop mechanisms should be considered during the midterm review. [EPA-HQ-OAR-2010-0799-9549-A2, pp. 5-6]

¹⁵ See 42 U.S.C. § 32902(a) (standards “shall be the maximum feasible average fuel economy level”) (emphasis added); id. at § 32901(a)(6) (defining “average fuel economy standard” as the “performance standard specifying a minimum level of average fuel economy applicable to a manufacturer”) (emphasis added); see also *Center for Biological Diversity v. National Highway Traffic Safety Admin.*, 538 F.3d 1172, 1204-06 (9th Cir. 2008) (concluding that NHTSA acted arbitrarily and capriciously in dismissing inclusion of a backstop in issuing reformed CAFE standards). [EPA-HQ-OAR-2010-0799-9549-A2, p. 5]

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16 42 U.S.C. § 7521(a)(1) (EPA shall propose “standards applicable to the emission of any air pollutant” from vehicles that “cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare”); 42 U.S.C. § 7401(c) (“primary goal” of the Clean Air Act is “pollution prevention”). [EPA-HQ-OAR-2010-0799-9549-A2, p. 5]

Organization: Toyota Motor North America

Potential Expansion of Domestic Passenger Car Anti-Backsliding Standards [EPA-HQ-OAR-2010-0799-9586-A1, p.6]

Toyota opposes any expansion of anti-backsliding provisions beyond the domestic passenger car fleet in the CAFE program. The clear intent of Congress has been that NHTSA should only establish anti-backsliding standards for the domestic car fleet. As such, EPCA (as modified by EISA) requires NHTSA to establish anti-backsliding standards for domestic passenger cars and does not authorize NHTSA to establish additional anti-backsliding standards for import cars and trucks. [EPA-HQ-OAR-2010-0799-9586-A1, p.6]

In the case of EPA and the CAA, there is no explicit statutory authority that either compels or authorizes EPA to establish anti-backsliding standards for any class of light duty vehicles. While EPA's authority may be ambiguous, it is clear that any EPA-issued anti-backsliding standards would create new inconsistencies between the NHTSA and EPA programs, rather than support the goal of harmonization. NHTSA's anti backsliding standards are limited to domestic passenger cars, and the CAA cannot be used to duplicate a similar outcome since EPA's fleet definitions do not distinguish between domestic cars and import cars. The most 'harmonized' outcome is for NHTSA to proceed with the required domestic car anti-backsliding standard for the CAFE program, and for EPA to forego any attempt to set anti-backsliding standards under the CAA. [EPA-HQ-OAR-2010-0799-9586-A1, p.6]

Notwithstanding the legal constraints described above, Toyota outlined in its November 25, 2009 comments in response to the 2012-2016 model year rulemaking a variety of additional factors describing why anti-backsliding standards are unnecessary. Please refer to those comments. [EPA-HQ-OAR-2010-0799-9586-A1, p.6]

Organization: Union of Concerned Scientists (UCS)

Finally, the attribute-based system employed in the proposed rule does not guarantee that automakers will actually achieve the 163 g/mi and 49.6 mpg standard in MY2025. The agencies base these fleetwide projections on a variety of assumptions, including the vehicle footprint of future vehicles and the relative sales mix between cars and light-trucks. If these assumptions are wrong or if automakers adopt compliance strategies that either reclassify passenger cars as light trucks or add size to vehicle footprints in order to qualify for weaker standards, the projected benefits of the standards could be sizably eroded, particularly in the first five model years of the program, which have the largest gap in car/truck stringency. [EPA-HQ-OAR-2010-0799-9567-A2, p. 7]

In order to ensure that model year 2017-2025 vehicles yield anticipated consumer savings, oil savings and greenhouse gas reductions, the standards must include a backstop mechanism. Under the current attribute-based system, no mechanism exists to adjust individual manufacturers' fleet requirements in the event that product plans or manufacturer-specific performance diverges from anticipated levels. Because of these risks and because the model year 2017-2025 standards will be finalized before compliance data can be gathered under the new attribute-based system, it is critical to include a backstop mechanism to ensure that the fleet maintains its projected fuel economy and greenhouse gas emissions trajectory. A backstop could take numerous forms; UCS suggests one that includes an automatic re-computation or "ratchet" of stringencies for subsequent years, such that the National Program's cumulative emissions reductions and oil savings goals are fully achieved in 2025, even if falling short in early years of the program. [EPA-HQ-OAR-2010-0799-9567-A2, p. 7]

Finally, in addition to the gap between the car and truck standards, the relative stringency of the truck standards decreases as vehicle size increases. For the largest pickup trucks, total reductions in emissions required between 2016 and 2021 amount to less than 5% versus nearly 18% for the smallest trucks. Automakers may find it more economical to add footprint size to qualify for less stringent standards rather than add emission control technologies, further eroding benefits.

To prevent a loss in benefits, the agencies should adopt a backstop mechanism to ensure the anticipated global warming pollution reductions and oil savings benefits are achieved. [EPA-HQ-OAR-2010-0799-9567-A2, p. 8]

Organization: Whitefoot, K. and Skerlos, S.

Further backstops in the standards are warranted due to the substantial risks of backsliding during MYs 2017-2025. NHTSA has proposed minimum standards for domestically manufactured passenger cars in the proposed rule. We believe this is not enough to ensure that actual fuel economy improvements are close to the expected levels that NHTSA projects. [EPA-HQ-OAR-2010-0799-9447-A1, p. 3]

Response:

2.3. Additional Flexibility for Manufacturers Eligible for TLAAS under MY 2012-2016 Standards

Organizations Included in this Section

Alliance of Automobile Manufacturers
American Suzuki Motor Corporation
Association of Global Automakers, Inc. (Global Automakers)
Fisker Automotive, Inc.
Jaguar Land Rover North America, LLC (JLRNA)

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Mercedes-Benz USA, LLC
Natural Resources Defense Council (NRDC)
Porsche Cars North America, Inc. (PCNA)

Organization: Alliance of Automobile Manufacturers

The program flexibilities in the Notice of Proposed Rulemaking (NPRM) will help manufacturers introduce new technologies that produce concrete environmental and fuel consumption benefits. The Alliance supports the flexibilities in the proposal and understands the needs of lower volume, limited line manufacturers. The program flexibilities in the NPRM will encourage early investment in technologies that produce concrete environmental and fuel consumption benefits that will be necessary to meet these challenging and increasingly stringent standards over the longer term. [EPA-HQ-OAR-2010-0799-9487-A1, p.4]

Organization: American Suzuki Motor Corporation

Suzuki is concerned, however, that the proposed standards do not adequately recognize the lead time needs of low-volume, limited-line manufacturers like Suzuki. [EPA-HQ-OAR-2010-0799-9523-A1, p.1]

California has long recognized that companies with small sales volumes and a limited number of models face unique challenges in complying with stringent standards that rely on the implementation of advanced technologies. As a result, California has created different manufacturer size categories¹, and has used these categories to provide additional implementation lead time for smaller-volume manufacturers. This approach helps to address, to some extent, the disadvantages that small-volume manufacturers have, compared to larger-volume manufacturers, in introducing advanced technologies across their product lines. Suzuki requests that the Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) adopt a similar approach in regulating GHG emissions and corporate average fuel economy. [EPA-HQ-OAR-2010-0799-9523-A1, p.1]

Suzuki Proposal

Suzuki proposes that EPA and NHTSA (1) establish a Limited Line Manufacturer (LLM) size category that approximates the California Small Volume Manufacturer (SVM) category scaled up to a national level, and (2) establish a three-year implementation lead time allowance for LLMs. [EPA-HQ-OAR-2010-0799-9523-A1, p.1]

Suzuki suggests that a national average annual sales volume such as 50,000 vehicles (calculated as a three-year average) would roughly approximate, on a national level, the threshold to qualify as an SVM in California. Suzuki proposes that LLMs be given a three-year implementation lead time allowance which does not require LLMs to comply with the 2017 model year standards until the 2020 model year, and requires LLMs to comply with the 2018-2025 model year standards in model years 2021-2028. Under this proposal, LLMs would meet the same GHG/fuel economy standards as large manufacturers, but with a moving three-year lead time allowance. [EPA-HQ-OAR-2010-0799-9523-A1, p.1]

Reason for Suzuki's Proposal

When small-volume manufacturers need to develop new technology and develop a new model/new engine to make the significant improvements necessary to comply with the proposed standards, the per-vehicle cost for the special development that is needed specifically for the U.S. market is much higher than for manufacturers with larger sales volumes. [EPA-HQ-OAR-2010-0799-9523-A1, p.2]

Adoption of Suzuki's proposal would have an insignificant impact on nationwide GHG emissions, as the combined GHG emissions from vehicles produced by small-volume manufacturers are an extremely small percentage of the fleet-wide total. [EPA-HQ-OAR-2010-0799-9523-A1, p.2]

1 - California size categories include 'Small Volume Manufacturer (SVM)', defined as a manufacturer with an average annual sales volume in California of fewer than 4,500 vehicles, and 'Independent Low Volume Manufacturer (ILVM)' defined as a manufacturer with an average annual sales volume in California of fewer than 10,000 vehicles.

Organization: Association of Global Automakers, Inc. (Global Automakers)

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 68.]

And, finally, Global Automakers supports the case-by-case small volume manufacturers approach. It allows the flexibility that this small segment of the industry needs while also mandating requirements necessary to control greenhouse gases. We also support the harmonization of the definition of small volume manufacturers.

Organization: Fisker Automotive, Inc.

Likewise, manufacturers seeking to participate in the expanded Temporary Lead-Time Allowance Alternative Standards (TLAAS) “must secure credits to the extent they are reasonably available from other manufacturers to offset the difference between their emissions reductions obligations under the base TLAAs program and the expanded TLAAS program.” Fisker Automotive strongly encourages EPA to hold to the spirit of these provisions. As the only entity with complete knowledge of every automaker’s credits and deficits, it is incumbent upon EPA to ensure that this provision is fairly enforced. [EPA-HQ-OAR-2010-0799-9266-A1, p. 4]

Organization: Jaguar Land Rover North America, LLC (JLRNA)

Jaguar Land Rover will meet the 2012-2016MY GHG program by a number of significant product actions and through use of the Expanded TLAAS program. [EPA-HQ-OAR-2010-0799-8102-A1, p. 1]

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The Unique Challenge Facing Jaguar Land Rover in the Transition to the 2017MY Standard

Even though our company will make substantial CO₂ reductions during the 2012-2016MY period, the proposed 2017MY standard poses very significant challenges. First, as the Expanded TLAAS program comes to a close in 2016MY, companies which participated in this program will start 2017MY with either no CO₂ credits banked or CO₂ debits carrying forward. We understand the rationale in this structure but the resulting transition does not allow lower volume, limited line manufacturers the same flexibilities as afforded large volume manufacturers. [EPA-HQ-OAR-2010-0799-8102-A1, p. 1]

Given this situation, JLR requests that EPA consider a range of flexibilities aimed at creating a fair standard for lower volume, limited line manufacturers. Included amongst these ideas is a proposal to phase in the base standard for lower volume, limited line manufacturers toward full compliance in 2022MY. [EPA-HQ-OAR-2010-0799-8102-A1, p. 1]

As a result of this dramatic impact, JLR is inviting the EPA to consider phasing-in the GHG program for lower volume, limited line manufacturers, starting in 2017MY and ending with 2021MY production. We propose that manufacturers in this program be required to come into full compliance with the base program from 2022MY. [EPA-HQ-OAR-2010-0799-8102-A1, p. 2]

In the NPRM, EPA requested comments on additional lead-time for lower volume, limited line manufacturers. In response to this invitation, Jaguar Land Rover requests that EPA consider phasing in the 2017MY+ program for lower volume, limited line niche manufacturers when the Expanded TLAAS ends. This proposed alternative GHG standard would be designed to ensure fair but very stringent CO₂ reductions in excess of the industry average. [EPA-HQ-OAR-2010-0799-8102-A1, p. 2]

JLR will be delivering very significant CO₂ reductions well in excess of industry averages. However the required rates of reduction implied by the proposed NPRM curves between 2016MY and 2017MY are very challenging for lower volume, limited line manufacturers coming out of the Expanded TLAAS. JLR's fleet of passenger cars would be required to deliver circa [] CO₂ reduction as required by the NPRM. JLR's fleet of light trucks would be required to deliver circa [] CO₂ reduction as required by the NPRM. [Note: CBI information - [] - was omitted.] [EPA-HQ-OAR-2010-0799-8102-A1, p. 2]

Organization: Mercedes-Benz USA, LLC

- DAG supports establishing an alternative compliance pathway for companies to choose more stringent standards in the later model years to allow more lead time to diversify their U.S. product line-ups and to bring additional advance technology vehicles, such as fuel cell vehicles, to the U.S. market. [EPA-HQ-OAR-2010-0799-9483-A1, p. 2]

DAG supports a concept introduced in the proposal to provide an alternative compliance pathway to allow manufacturers additional lead time to reconstitute the light duty vehicle fleet. This suggestion was raised in the context of explaining that the agency would not extend the

Temporary Leadtime Allowance Alternative Standard ('TLAAS'). The agency requested comments on whether the intermediate-volume, limited-line manufacturers should receive additional flexibility in the latter years of the proposal, and whether the phase-in should be spread over more years for lower volume manufacturers. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-1]

DAG understands the agency's decision not to extend the TLAAS beyond its original terms. However, DAG agrees that manufacturers be accorded an option to adopt an alternative compliance pathway. The alternative would reduce the grams per mile reduction requirements during earlier model years and then make up most, or all of those carbon reductions in later model years.³ [EPA-HQ-OAR-2010-0799-9483-A1, p. A-1]

The alternative pathway would be available to all manufacturers. We anticipate, however, that most manufacturers, who are able to spread compliance costs across a broader fleet, would continue to choose the basic option since doing so would allow those manufacturers more consistency across model years. The alternative pathway would likely be utilized primarily by the small number of manufacturers with more concentrated product line-ups in order to diversify their U.S. market fleets and to bring more long-ranging advanced technology vehicles, such as fuel cell or dedicated CNG vehicles, to market. [EPA-HQ-OAR-2010-0799-9483-A1, pp. A-1-A-2]

DAG looks forward to discussing this option with the agencies and to developing an alternative compliance pathway that is likely to provide the necessary assistance while maintaining similar or equal overall levels of CO₂ reduction. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-2]

3 One possibility within the first four model years, MYs 2017-2020, would be to adjust the grams per mile reductions during the first two model years with corresponding increases in the latter two model years. Another possibility would be to spread the alternative pathway across the eight model years covered by the overall rulemaking.

Organization: Natural Resources Defense Council (NRDC)

4. Temporary Leadtime Allowance Alternative Standards Should Not be Extended to Model Years 2017-2025

NRDC agrees with the EPA proposal to end the Temporary Leadtime Allowance Alternative Standards with the 2016 model year. This exemption from the established 2012-2016 ramp-up—along with a generous early credit proposal, inclusion of FFV credits for MY 2012-2015, transferring credits between car and truck fleets, and 3-year carry forward of deficits—was provided so that all manufacturers had a pathway to comply with 2016 GHG standards. [EPA-HQ-OAR-2010-0799-9472-A2, pp. 13-14]

Organization: Porsche Cars North America, Inc. (PCNA)

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2. Unequal burden: The goal of overall GHG reduction for the industry requires contribution from all manufacturers, but must account for the trajectory required for particular manufacturers. Transition from TLAAS to the base standards is a disproportionate burden for niche car makers. That transition cannot be accomplished by gradual incremental improvements. [EPA-HQ-OAR-2010-0799-9264-A1, p. 7]

3. Economy of scale: Porsche faces cost challenges due to its size (less than 0.25% of U.S. industry sales). Our development costs for new technology cannot be spread over a large fleet to take advantage of natural economies of scale. There is a disproportionate financial impact on small manufacturers, due to higher per unit cost. [EPA-HQ-OAR-2010-0799-9264-A1, p. 7]

4. Skewed competition: Porsche's positioning among our direct competitors in the sports car segment is a disadvantage. Our larger competitors can support sports car sales by fleet averaging over a broad range of products. EPA has also proposed that our smallest competitors can request alternate 'lowest feasible' CO₂ standards. Porsche cannot employ either of these options. Thus, the playing field is not level. [EPA-HQ-OAR-2010-0799-9264-A1, p. 7]

5. Availability of credits: We expect that many manufacturers will forego credit banking in order to expand sales of more profitable non-compliant models. Further, uncertainty will encourage other manufacturers to retain unused credits as insurance against the risk of catastrophic noncompliance in future years. Therefore, we believe it is unlikely that GHG credits will be readily available for sale on the open market. In fact, during the 2012-2016 GHG rulemaking, the Agencies acknowledged that experience shows that manufacturers do not sell credits. A business case cannot be built around such uncertainties that threaten our very existence. [EPA-HQ-OAR-2010-0799-9264-A1, p. 7]

In the absence of alternative standards, current TLAAS manufacturers would face a 25% reduction in GHG standards at the expiration of TLAAS following MY 2016. Due to Porsche's unique position in the market, we believe that those standards as proposed would create a hurdle that would drive us from the marketplace. We urge the agencies to consider alternatives which do not unjustly punish small specialty car manufacturers.

Porsche AG is a low volume manufacturer of premium high performance sports vehicles, targeted to a very small niche market. To assume that a performance car is in the same category as an economy sedan is to impose requirements that ignore the constraints of the laws of physics. It is certainly well accepted that it would be inappropriate for SUVs and light trucks to be subject to the same standards as passenger cars with similar footprints. Similarly, we believe it is not appropriate to set identical GHG standards for small economy vehicles and specialty performance machines, because of their vastly different design criteria and different market segments. [EPA-HQ-OAR-2010-0799-9264-A1, p. 7]

The consequence of setting uniform standards is illustrated in the following tables taken from the NPRM, showing technology penetration for Model Years 2021 and 2025. As these tables show, Porsche would be expected to employ far greater electrification than any other manufacturer. This absurd compliance path would place us at a severe competitive disadvantage with respect to

development costs, and in the consumer market. [The tables can be found on p. 8 of Docket number EPA-HQ-OAR-2010-0799-9264-A1] [EPA-HQ-OAR-2010-0799-9264-A1, p. 8]

It is essential that a regulatory framework strive to accomplish its goals without interfering with natural free-market competition. Fair trade and free commerce demand a rule book that does not favor one business model over another. For the rules to be marketplace-neutral, accommodation is needed for the unique challenge facing low volume niche manufacturers, yet without precipitating an unfair advantage over larger manufacturers who compete in those same niche markets. [EPA-HQ-OAR-2010-0799-9264-A1, pp. 8-9]

Porsche suggests that a limited low volume alternative standards model similar to TLAAS is appropriate for the niche car market. We applaud the current TLAAS provisions, which require Porsche to make an annual GHG improvement comparable to the broader industry, without requiring wholesale restructuring of our market presence and without imposing an unfair competitive disadvantage either to us or to our competitors. [EPA-HQ-OAR-2010-0799-9264-A1, p. 9]

We estimate that the size of the industry's TLAAS fleet is on the order of 2% to 3% of total sales. The use of TLAAS standards at 125% of the base standards therefore has a minimal net effect on industry GHG performance in the 2012-2016 period. We believe that by further reducing the size of the TLAAS fleet (e.g., by 50% to 25,000 vehicles per manufacturer per year), the impact on industry-wide GHG would be negligible. A program like TLAAS is a sensible approach to achieving significant GHG benefits without interfering with the marketplace. We urge the agencies to continue to include alternative standards for the niche offerings of both small and large manufacturers. [EPA-HQ-OAR-2010-0799-9264-A1, p. 9]

Alternatively, we believe it would make sense to set GHG targets based on a sliding scale in proportion to market share / sales volume. This model would account for the relative ability of each manufacturer to weather increasing stringency, and to realize a return on the required technology investment. Conversely, as an OEM's sales and/or market share increase over time, it would make sense to adjust to more stringent GHG targets to reflect its increased capabilities. [EPA-HQ-OAR-2010-0799-9264-A1, p. 9]

Standards for small volume niche manufacturers should not be more stringent than the GHG performance of their competitors' comparable models. Porsche proposes that small volume OEMs would have standards for each model set to the average GHG performance of competitor vehicles with similar horsepower, power/weight ratio, and type of technology employed (Diesel, Y-6 Turbo, conventional hybrid, PHEV, etc.). This will ensure a level playing field in competition with larger manufacturers which are using fleet averaging. [EPA-HQ-OAR-2010-0799-9264-A1, pp. 9-10]

This approach would be modeled after provisions for lower volume car makers described in California's LEV-II / Pavley I model, and in the successful "Top Runner" model used in other countries. It is an apples-to-apples variable standard that guarantees a neutral application of standards among all competitors. By definition, this strategy will force smaller manufacturers to

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make annual GHG improvements equaling or exceeding the improvement of comparable models, and without disrupting healthy competition. The following text outlines LEY-II provisions for lower volume manufacturers: [EPA-HQ-OAR-2010-0799-9264-A1, p. 10]

[§ 1961.1. Greenhouse Gas Exhaust Emission Standards and Test Procedures (D) Requirements for Small Volume Manufacturers and Independent Low Volume Manufacturers.

1..... [EPA-HQ-OAR-2010-0799-9264-A1, p. 10]

2. At the beginning of the 2013 model year, each small volume manufacturer and independent low volume manufacturer shall identify all 2012 model year vehicle models, certified by a large volume manufacturer that are comparable to that small volume manufacturer or independent low volume manufacturer's 2016 model year vehicle models, based on horsepower and horsepower to weight ratio. The small volume manufacturer and independent low volume manufacturer shall demonstrate to the Executive Officer the appropriateness of each comparable vehicle model selected. Upon approval of the Executive Officer, s/he shall provide to the small volume manufacturer and to the independent low volume manufacturer the CO₂- equivalent value for each 2012 model year vehicle model that is approved. The small volume manufacturer and independent low volume manufacturer shall calculate an average greenhouse gas emissions value for each its greenhouse gas vehicle test groups based on the CO₂-equivalent values provided by the Executive Officer. [EPA-HQ-OAR-2010-0799-9264-A1, p. 10]

3. In the 2016 and subsequent model years, a small volume manufacturer and an independent low volume manufacturer shall either: a. not exceed the fleet average greenhouse gas emissions value calculated for each GHG vehicle test group for which a comparable vehicle is sold by a large volume manufacturer, in accordance with section 1961. Hal(l)(D12: J [EPA-HQ-OAR-2010-0799-9264-A1, p. 10]

Porsche believes that such a standards framework upholds the spirit of worldwide GHG policy, in that all participants are expected to contribute to the overall emission reduction goals. Even niche players in the high powered sports car segment will contribute to innovation and efficiency improvement. Indeed, such a framework would ensure a thriving, competitive performance car segment, leading to innovations applicable to the entire industry. [EPA-HQ-OAR-2010-0799-9264-A1, p. 10]

Alternate Phase-In

If long-term alternate standards or competitive standards are unacceptable, we suggest an alternate phase-in to the base standards. This would mitigate the potential 25% drop in GHG standards at the expiration of TLAAS. It is important to consider that the length of Porsche's product cycles is 2- to 3- times the typical industry product cycle, in order to allow recovery of investment costs over small annual volume. An extended phase-in would be critical to Porsche's survival. [EPA-HQ-OAR-2010-0799-9264-A1, p.11]

The phase-in suggested below is a linear trajectory, starting from MY 2015 TLAAS, and ending at the MY 2025 base standards. This example illustrates GHG targets for one subset of Porsche's

portfolio (small footprint sports cars). Similar curves can be drawn for other TLAAS products. [EPA-HQ-OAR-2010-0799-9264-A1, p.11]

It should be emphasized that this alternate phase-in would require an average 5.2% annual GHG reduction for these models, compared to 4.0% for vehicles which are already subject to the base standards in MY 2015. While such a phase-in would be a challenge, it does accommodate the long range planning needed to develop entire new product lines. [EPA-HQ-OAR-2010-0799-9264-A1, p.11]

Response:

2.4. Mid-term Evaluation

Organizations Included in this Section

Alexandria Hyundai
 Alliance of Automobile Manufacturers
 American Honda Motor Co., Inc.
 American Medical Association of California
 Association of Global Automakers, Inc. (Global Automakers)
 BMW of North America, LLC
 Center for Biological Diversity
 Chrysler Group LLC
 Consumer Federation of America (CFA)
 Ecology Center
 EcoMotors International, Inc.
 Ferrari
 Ford Motor Company
 General Motors Company
 Honeywell International, Inc.
 Honeywell Transportation Systems
 House of Representatives, Congress of the United States
 Hyundai America Technical Center
 Institute for Policy Integrity, New York University School of Law
 International Council on Clean Transportation (ICCT)
 Johnson Controls, Inc.
 Kia Motors
 Marshall, C.
 Mass Comment Campaign (20,500) (Union of Concerned Scientists-3)
 Mass Comment Campaign (375) (Union of Concerned Scientists-2)
 Mass Comment Campaign (9,570) (Unknown Organization)
 Mercedes-Benz USA, LLC
 Mitsubishi Motors R&D of America, Inc. (MRDA)
 Motor & Equipment Manufacturers Association (MEMA)

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National Association of Clean Air Agencies (NACAA)
 National Association of Manufacturers (NAM)
 National Automobile Dealers Association (NADA)
 Natural Resources Defense Council (NRDC)
 Nissan North America, Inc.
 Northeast States for Coordinated Air Use Management (NESCAUM)
 Pew Charitable Trusts
 Porsche Cars North America, Inc. (PCNA)
 RVIA
 Securing America's Future Energy (SAFE)
 Sierra Club, Environment America, Safe Climate Campaign, and Clean Air Council
 Toyota Motor North America
 U.S. Chamber of Commerce
 Union of Concerned Scientists (UCS)
 United Automobile Workers (UAW)
 United States Senate
 University of Michigan
 Volvo Car Corporation (VCC)
 Weiner, L.

Organization: Alexandria Hyundai

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 66.]

As a contingency, if consumers in fact reject these vehicle offerings, it is my understanding the midterm review provides an opportunity to reset the goals if the needed technology cannot be provided at a reasonable price.

Organization: Alliance of Automobile Manufacturers

The Alliance supports the proposal to include an in-depth mid-term evaluation. [EPA-HQ-OAR-2010-0799-9487-A1, p.3]

This rulemaking reaches an unprecedented 13 years into the future. A mid-term evaluation process will allow the agencies to review a broad range of factors and make appropriate adjustments. It will provide better data and insight on a range of issues relevant to the appropriateness of the MY 2022-2025 standards, including consumers' willingness to buy the vehicles that are required to comply with the standards; future fuel pricing; and technology and raw materials costs. The Alliance comments on the mid-term evaluation include additional topics that the agencies should review. We recommend that, in addition to the proposed formal mid-term evaluation, the agencies continue their open dialogue and also conduct a series of smaller, focused technical evaluations - or "check-ins" - on the key assumptions of the proposal. The Alliance also requests a more specific description of the mid-term evaluation process and the specifics to be reviewed, including the timeline and procedures for assuring that the studies the agencies rely on are appropriately peer reviewed. [EPA-HQ-OAR-2010-0799-9487-A1, p.3]

The Alliance Supports the Proposal to Include an In-Depth Mid-Term Evaluation. [EPA-HQ-OAR-2010-0799-9487-A1, p.6]

The MY 2017-2025 GHG proposal includes provisions requiring EPA to conduct a mid-term evaluation of the MY 2022-2025 light-duty GHG standards to determine whether those standards remain appropriate in light of technological and other changes that may have occurred since the time of proposal. This evaluation process will be coordinated with NHTSA's effort to set final, binding CAFE standards for the 2022-2025 model years. The mid-term evaluation will include consideration of up to date information, a "holistic assessment of all of the factors considered by the agencies in setting standards" and the "expected impact of those factors on the manufacturers' ability to comply." To facilitate the evaluation, EPA (along with NHTSA and CARB) will publish a draft Technical Assessment Report (TAR), which will be peer-reviewed and made available for public comment. EPA also will request comment on whether the MY 2022-2025 standards remain appropriate under section 202(a) of the Clean Air Act (CAA) and whether the standards should be made more or less stringent. No later than April 1, 2018, EPA will make a final determination whether the MY 2022-2025 standards, as adopted in 2012, are appropriate. This process also is intended to guide NHTSA's decision-making regarding its MY 2022-25 CAFE standards. If EPA concludes that the standards are not appropriate, the agency will then initiate a rulemaking to adopt standards that are appropriate under section 202(a). Both EPA and NHTSA have stated that they would issue a joint rulemaking at least 18 months prior to the beginning of the 2022 model year, consistent with the statutory directive in the Energy Policy and Conservation Act of 2005 (EPCA). [EPA-HQ-OAR-2010-0799-9487-A1, p.6]

The Alliance consistently has advocated that a mid-term evaluation is more than just appropriate; it is a critical component of this rulemaking package if these GHG and CAFE standards are to be successful. This rulemaking will govern vehicle production 13 years from now, a particularly long time period when predicting technologies, costs, infrastructure, fuels and consumer behavior. It comes on the heels of a five-year rulemaking that will, according to the agencies, cost automakers almost \$52 billion – the highest cost of any rulemaking imposed to date on the auto industry. The agencies estimate the additional GHG reductions and fuel economy gains from this rule will cost automakers an additional \$133-157 billion, bringing the combined cost of the MY 2012-25 rules to somewhere between \$185 and \$209 billion. This unprecedented effort and expense will further our country's energy and environmental goals, but only if consumers choose to purchase these fuel-efficient, climate-friendly vehicle technologies. [EPA-HQ-OAR-2010-0799-9487-A1, p.6]

By necessity, the GHG and CAFE standards proposed here are predicated on significant assumptions regarding the future - including such factors as the pace of technological innovation, deployment of supportive infrastructure for alternative fuels and advanced vehicles, rates of market penetration for new vehicle technologies, future costs of emerging technologies, fuel cost and availability and consumer acceptance. The agencies have attempted to make reasonable projections based on recent data. Nevertheless, the proposed standards cover an unusually long time horizon, governing the production of vehicles over a decade into the future. The mid-term evaluation will allow the agencies to determine whether the CAFE and GHG standards should be

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adjusted as a result of customers' willingness to buy vehicles that are required to comply with the standards, developments in technology, costs, safety, fuels, infrastructure and other relevant factors. [EPA-HQ-OAR-2010-0799-9487-A1, p.7]

Thirteen years into the future, consumer purchasing patterns will be the biggest unknown. Besides fuel economy, we know that consumers demand affordability, safety, convenience, performance and utility. One challenge we face is that fuel economy considerations often rank below these other attributes. Fuel prices, which are especially difficult to project, have a huge impact on how consumers weigh fuel economy at the dealership. All of this explains why the final rule should include a rigorous mid-term evaluation. [EPA-HQ-OAR-2010-0799-9487-A1, p.9]

Adherence to the Mid-Term Evaluation Process and Timing is Critical. [EPA-HQ-OAR-2010-0799-9487-A1, p.7]

EPA has proposed that the MY 2022-2025 GHG standards “will remain in effect unless and until EPA changes them by rulemaking.” EPA has not specifically provided for expedited judicial review of the results of the final mid-term evaluation or any final rule setting revised MY 2022-2025 GHG standards. [EPA-HQ-OAR-2010-0799-9487-A1, p.7]

The Alliance would like to stress how important it is that both agencies follow the mid-term evaluation process laid out in the regulations, including strict adherence to the deadlines. Following the process as proposed should enable the agencies to consider all relevant issues, make an informed decision about the appropriateness of the MY 2022-2025 standards, and allow sufficient time for the promulgation of different standards and/or judicial review, if necessary. The purpose of the mid-term evaluation provision is to ensure that the assumptions underlying the MY 2022-2025 standards remain valid; to the extent that the assumptions are incorrect and the standards are inappropriate, the burden is likely to fall primarily on vehicle manufacturers. If EPA fails to follow the mid-term evaluation process or fails to meet the deadlines, it is probable that EPA will not have complied with the Section 202(a)(2) mandate to provide adequate time for the development and application of the technology required to comply with such standards. Moreover, failure to conduct the midterm evaluation or to meet the deadlines would constitute a failure to perform a nondiscretionary duty and/or final agency action. [EPA-HQ-OAR-2010-0799-9487-A1, pp.7-8]

In making this comment, we wish to stress that the Alliance does not assume that EPA or NHTSA intend to deviate from the mid-term evaluation process or ignore its deadlines. We believe that all parties, including the agencies, will work in good faith to follow the process. We merely wish to stress that the success of the mid-term evaluation depends on close adherence to the process and the deadlines. If anything is allowed to undermine or delay the process, it creates a significant potential for disputes and difficulties in the future, something we all hope to avoid. [EPA-HQ-OAR-2010-0799-9487-A1, p.8]

The Agencies Should Conduct Periodic Technical “Check-Ins.” [EPA-HQ-OAR-2010-0799-9487-A1, p.8]

In the time leading up to the mid-term evaluation - and following the completion of the evaluation - the agencies should continue to check the validity of the assumptions upon which their standards are based. We suggest not only one formal mid-term evaluation, as the agencies have proposed, but also a series of smaller, focused, technical evaluations of, or “check-ins” on, the key assumptions of the proposal. These “check-ins” will allow the agencies to consider the latest relevant technical information, and thereby help the agencies keep the program on track and produce the best long term results. By having these “check-ins” the agencies will be better prepared to begin their formal mid-term evaluation and to make appropriate adjustments during the second half of the period covered by these regulations. [EPA-HQ-OAR-2010-0799-9487-A1, p.8]

The Alliance understands that EPA's mid-term evaluation will take place concurrently, and in conjunction with, NHTSA's process for setting final CAFE standards for MY 2022-2025. The agencies should jointly examine progress achieved towards compliance with the standards, and assess the latest information available on key assumptions and trends used to develop the standards, including the criteria set forth for determining maximum feasible fuel economy standards in 49 U.S.C. § 32902(f). Factors that should be considered include, but should not be limited to: [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Development of powertrain improvements to gasoline and diesel-powered vehicles; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Level of employment in U.S. automotive sector; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Availability and implementation of methods to reduce weight while assuring compliance with state and Federal safety, emissions and equipment laws and standards, and maintaining acceptable performance in consumer information crash testing and manufacturer due care testing; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Actual and projected combined sales of alternative fuel vehicles; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Actual and projected availability of public and private charging infrastructure for electric vehicles; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Actual and projected availability of low carbon and technology-enabling fuels and infrastructure, along with adoption and implementation of clean and renewable energy standards; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Costs, including average costs of technologies to ensure compliance with the standards, such as vehicle batteries and power electronics, mass reduction, and alternative fuels, and anticipated trends in these costs; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Current and expected availability of state and Federal incentives/subsidies for advanced technology vehicles; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

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Average payback periods for any incremental vehicle costs associated with meeting the standards, as well as up-front cost and impacts on consumer affordability; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Costs for gasoline, diesel fuel and alternative fuels; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Total light-duty vehicle sales and projected fleet mix; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Consumer demand for and customer acceptance of fuel-efficient technologies, and consumer valuation of fuel savings; [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

End-of-life costs associated with advanced technology vehicles; and [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Any other factors that may be deemed relevant to the review. [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Some recent studies attempt to identify opportunities for cost-effective near-term fuel economy improvements but also raise important questions about longer-term conditions. These questions call for information that is not yet available to EPA, NHTSA, the California Air Resources Board or any other party, including automobile manufacturers. The Alliance recommends that the mid-term evaluation focus on the issues as detailed below. During the evaluation, the agencies should seek expert peer-reviewed data and analysis, including the input of the National Academy of Sciences (NAS), to answer the following questions, among others: [EPA-HQ-OAR-2010-0799-9487-A1, p.17]

Given how little is known about the “energy paradox,” the Alliance supports NHTSA’s proposal to develop a Consumer Vehicle Choice Model to inform the mid-term evaluation. Such a model should also look at the other factors identified in the Preliminary RIA as having an impact on consumer purchasing decisions: sales taxes, insurance costs, the additional cost of auto loans and changes in resale value. To have credibility, the model needs to use real-world data, be developed in a transparent manner with full peer review, and should assess uncertainties in its predictions. [EPA-HQ-OAR-2010-0799-9487-A1, p.19]

Given the considerable uncertainty about future technology development, cost and consumer acceptability, the proposed mid-term evaluation is essential in order to assure that the maximum feasible fuel economy benefits are obtained in a cost-effective and safety neutral manner. [EPA-HQ-OAR-2010-0799-9487-A1, p.22]

Process for Conducting the Mid-Term Evaluation [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

The NPRM indicates that a draft Technical Assessment Report will be completed by November 15, 2017, and that EPA will make a final determination by April 1, 2018. The Alliance believes that a more detailed description of the process would be helpful. In particular, the final regulatory language should indicate that the agencies intend to perform a thorough analysis of

consumer purchasing behavior, the single most important factor that will determine whether the goals of the program are being met. [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

The final regulatory language should also include the following important details: [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

start date of the evaluation and a schedule for major milestones to assure that the review is completed in time for EPA to make a fully informed regulatory determination; [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

specific studies the agencies plan to conduct; [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

details of the peer review process; [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

availability of a public docket; [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

role of NAS in the mid-term evaluation; and [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

roles of other departments and agencies that provide or regulate alternative fuels and emerging technologies. [EPA-HQ-OAR-2010-0799-9487-A1, p.24]

Further, the Alliance suggests that multipliers, like many aspects of the program, be reviewed during the mid-term evaluation. Should the mid-term evaluation reveal continuing market challenges with advanced technology vehicles, extending the multipliers beyond MY 2021 may be necessary to encourage fleet penetration. [EPA-HQ-OAR-2010-0799-9487-A1, p.82]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 96-97.]

That's why it's critical that the final rule include a rigorous mid-term review with a clearly defined process for its implementation.

During the review, the agencies should seek expert peer-reviewed information including the input of the National Academy of Sciences to answer these questions: Are the costs of advanced technologies declining as expected? Are researchers making the breakthroughs anticipated? What's happening with fuel prices, and how are consumers responding? What impact are the new requirements having on sales and on employment? How are the new rules impacting vehicle safety? What's happened with fuel quality? Will liquid fuels support the fuel-efficient technologies that have been introduced? Will the new charging infrastructure be available to enable plug-in hybrids, battery electric vehicles and fuel cell vehicles to penetrate the market at the levels predicted?

Organization: American Honda Motor Co., Inc.

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[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 121.]

The proposed mid-term review seems appropriate to us and we believe it will be essential to checking progress and making necessary adjustments that cannot be foreseen from this early date.

Organization: American Medical Association of California

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 48.]

As well as to whether any midterm program review that may be viewed by some as an opportunity to weaken the standards previously agreed upon. The midterm review may have ramifications for the State of California and the programs in place here. It will align with the national standards, and it must remain clear that California maintains its own Clear Air Act authority to enact our own rules more stringent than the federal rules due to our extreme air quality challenges.

Organization: Association of Global Automakers, Inc. (Global Automakers)

For this reason, we support the proposed mid-term review to reassess the stringency of the standards, including technology penetration rates, fuel costs, and most importantly, consumer acceptance. [EPA-HQ-OAR-2010-0799-9466-A1, p. 1]

[These comments were also submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 66.]

[These comments were also submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 50-51.]

Due to the many uncertainties that are implicit in the technical and economic assumptions that form the basis for the proposed standards, we support the proposed mid-term review of the standards. We also support the recommendation made at the Detroit public hearing that the final rule should specify a clearly defined process for the review, with a designated list of questions to be addressed. In addition, we agree with the recommendation (again at the Detroit public hearing) that the agencies consider a series of more narrow reviews of key aspects of the standards. [EPA-HQ-OAR-2010-0799-9466-A1, p. 9]

The need for a mid-term review finds ample support in both EISA and the Clean Air Act, as both statutes require the promulgation of regulations that are based on the most up-to-date information concerning the costs and benefits of the technologies required to meet the standards. Indeed, because EISA prohibits the promulgation of fuel economy standards past the MY 2021, a mid-term evaluation is required before final CAFE standards can be promulgated for the 2022 through 2025 MYs. EISA provides that the Secretary shall “issue regulations under this title prescribing average fuel economy standards for at least 1, but not more than 5, model years.” 49

U.S.C. § 32902(b)(3)(b). Congress included the 5 year limit, in part, because it recognized that the factors NHTSA must consider in adopting fuel economy standards—technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy, see 49 U.S.C. § 32902(f)—are fluid and vary over time. Consequently, any attempt to weigh these factors today for standards that would not apply until the 2022 MY would be fraught with uncertainty and inherently arbitrary. [EPA-HQ-OAR-2010-0799-9466-A1, pp. 9-10]

The current rulemaking being jointly undertaken by EPA and NHTSA encompasses nine model years (MYs 2017 through 2025). Under the plain terms of the statute, any final fuel economy standards that are issued now and are applicable to a model year after 2021 would be invalid. The Notice of Proposed Rulemaking recognizes this concern and therefore states “[t]he second phase of the CAFE program, from MYs 2022–2025, represents conditional proposed standards . . .” 76 FR at 74,859. NHTSA correctly recognizes that “conditional” rulemaking in this instance “means to say that the proposed standards for MYs 2022–2025 represent the agency’s current best estimate of what levels of stringency would be maximum feasible in those model years, but in order for the standards for those model years to be legally binding a subsequent rulemaking must be undertaken by the agency at a later time.” *Id.*, n.7. According to NHTSA, “[t]he passenger car and light truck CAFE standards for MYs 2022–2025 will be determined with finality in a subsequent, de novo notice and comment rulemaking conducted in full compliance with EPCA/EISA and other applicable law . . .” *Id.* at 75,166. [EPA-HQ-OAR-2010-0799-9466-A1, p. 10]

Global Automakers supports the intent expressed in the Notice of Proposed Rulemaking concerning the mid-term evaluation. However, we are concerned that the actual language of the proposed regulations goes too far in adopting final regulations for MY 2022 through 2025. Proposed 49 C.F.R. § 531.5(c) provides that “[f]or model years 2012–2025, a manufacturer’s passenger automobile fleet shall comply with the fleet average fuel economy level calculated for that model year according to Figure 2 . . .” and provides the parameters for the fuel economy targets through the 2025 MY. Viewed in isolation, this provision would constitute final fuel economy standards for the 2022 through 2025 MYs. The standards are ostensibly made conditional through proposed subsection (e), which provides: “For model years 2022–2025, each manufacturer shall comply with the standards set forth in paragraphs (c) and (d) in this section, if NHTSA determines in a rulemaking, initiated after January 1, 2017, and conducted in accordance with 49 U.S.C. 32902, that the standards in paragraphs (c) and (d) are the maximum feasible standards for model years 2022–2025. . . .” [EPA-HQ-OAR-2010-0799-9466-A1, p. 10]

Global Automakers believes that a mid-term evaluation of the GHG emission standards is likewise not only permissible under the Clean Air Act, but also required because of the uncertainties inherent in projecting regulatory requirements nine to twelve years into the future. First, Section 202(a) plainly provides EPA with the authority for a mid-term evaluation. See 42 U.S.C. § 7521(a)(1) (providing that “[t]he Administrator shall by regulation prescribe (and from time to time revise)” motor vehicle emission standards) (emphasis added). [EPA-HQ-OAR-2010-0799-9466-A1, pp. 10-11]

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Moreover, a mid-term evaluation is required under the Clean Air Act in view of the proposed regulations' long regulatory horizon. The Clean Air Act requires that standards "shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." 42 U.S.C. § 7521(a)(2). EPA's determination concerning the appropriate level of stringency for GHG emission standards must be based upon reliable and up-to-date information. [EPA-HQ-OAR-2010-0799-9466-A1, p. 11]

Given the extremely long time-horizon of these proposed mobile source regulations, EPA has conceded a number of uncertainties in the analyses that underlie its current rulemaking. See, e.g., 76 FR at 74,881 (recognizing the "uncertainties regarding the benefit and cost values presented in this proposal"). For example, the NPRM states that EPA and NHTSA "did not consider technologies that are currently in an initial stage of research because of the uncertainty involved in the availability and feasibility of implementing these technologies with significant penetration rates for this analysis. The agencies recognize that due to the relatively long time frame between the date of this proposal and 2025, it is very possible that new and innovative technologies will make their way into the fleet, perhaps even in significant numbers, that we have not considered in this analysis." *Id.* at 74,922. Global Automakers believes that the converse may also be true, i.e., the proposed standards are based on assumptions concerning the availability and market penetration of technologies up to 12 years into the future that may not prove entirely accurate. Consequently, Global Automakers believes that it would have been arbitrary and capricious for EPA to promulgate GHG emission standards for model years as far into the future as MY 2022-2025 without providing for a mid-term evaluation. [EPA-HQ-OAR-2010-0799-9466-A1, p. 11]

Organization: BMW of North America, LLC

An in-depth mid-term review is extremely important in order to monitor the development of external factors such as customer acceptance of more fuel efficient vehicles. [EPA-HQ-OAR-2010-0799-9579-A1, p. 1]

Therefore, an in-depth mid-term review is an extremely important pillar in the proposed rule in order to monitor the development of external factors which are not under the manufacturer's direct control. This review is critical for reassessment of what technology can deliver and what consumers are willing to buy. [EPA-HQ-OAR-2010-0799-9579-A1, p. 3]

[These comments were also submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 78-79.]

Organization: Center for Biological Diversity

H. The Agencies' Proposed Interim Rulemaking Should, at a Minimum, Be Based on a Presumption that the Stringencies of the Standards Will Not Decrease

We have already commented on the Agencies' proposed mid-term review in our response to the DEIS. We add here that the Agencies' proposed method of undertaking this review is faulty. They state they intend the review to be based on "(1) a holistic assessment of all of the factors

considered by the agencies in setting standards . . . , and (2) the expected impact of those factors on the manufacturers' ability to comply, without placing decisive weight on any particular factor or projection." To the contrary, as fully explained above, the Agencies must place decisive weight on energy conservation. Yet, by highlighting manufacturers' ability to comply in a separate category, the Agencies tip their hand about a very different, and improper, weighing of the statutory factors. We further note the irony of requests by automakers for "frequent evaluations" of the MY 2017-2025 standards in light of their insistence that "certainty" of standards and extreme lead times are needed if stringencies are to be increased.¹¹⁰ Efforts to water down already insufficient standards by any means must be resisted. [EPA-HQ-OAR-2010-0799-9479-A1, pp. 24-25]

¹¹⁰ See Jason Plautz, Fuel Economy: Automakers Urge Frequent Evaluations of 2027-2025 Program, GREENWIRE, Jan. 17, 2012. [EPA-HQ-OAR-2010-0799-9479-A1, p. 25]

Organization: Chrysler Group LLC

This rulemaking will affect vehicles over thirteen years into the future. Many key elements such as technology development, technology costs, fuel costs, and customer acceptance can be difficult to accurately predict. Therefore, Chrysler strongly supports the agencies' proposal to hold a formal mid-term review of the 2022-2025 model year standards and informal monitoring of industry progress towards meeting the National Program goals. [EPA-HQ-OAR-2010-0799-9495-A1, p. 2]

For this reason the proposed mid-term review of the 2022-2025 MY standards is critical. Chrysler strongly supports this provision and encourages EPA and NHTSA (collectively, the "Agencies") to also establish regular informal reviews leading up to and following the formal mid-term review. [EPA-HQ-OAR-2010-0799-9495-A1, p. 5]

Chrysler notes that the Agencies have a firm legal basis to conduct the mid-term evaluation. (Attachment 1)

The Agencies have legal authority to conduct a formal mid-term evaluation which can affirm or modify standards promulgated for the 2022-2025 model years. [EPA-HQ-OAR-2010-0799-9495-A1, p. 6]

EPA and NHTSA have a firm legal basis to conduct the mid-term evaluation

EPA and NHTSA have ample authority under Section 307(d) of the Clean Air Act and the Administrative Procedure Act to reconsider regulations based on new information. See, e.g., 5 U.S.C. § 553(e) (providing for petitions to issue, amend or repeal a rule); 42 U.S.C. § 7607(b) (allowing petitions for review of a Clean Air Act rule based on new information); 49 U.S.C. § 32902(c) (authorizing the Secretary of the Department of Transportation to amend CAFE

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standards following notice-and-comment rulemaking under 5 U.S.C. § 553 and allowing for oral, transcribed presentations). [EPA-HQ-OAR-2010-0799-9495-A1, p. 7]

As described in the proposed rule, “NHTSA has a statutory obligation to conduct a separate de novo rulemaking in order to establish final standards for vehicles for the 2022-2025 model years and would conduct a mid-term evaluation as part of that rulemaking.” 76 Fed. Reg. at 74,861. Under the Energy Policy Conservation Act (“EPCA”), NHTSA must set fuel economy standards at least 18 months before the beginning of each model year, 49 U.S.C. § 32902(a), and “must issue regulations ... prescribing average fuel economy standards for at least 1, but not more than 5, model years.” 49 U.S.C. § 32902 (b)(3)(B). Since NHTSA must go through future rulemaking to establish the MY 2022-2025 standards, a full consideration of the standards based on the record at the time of the rulemaking is essential. [EPA-HQ-OAR-2010-0799-9495-A1, p. 7]

EPA proposed a commitment to undertake a similar mid-term evaluation under the Clean Air Act. See 76 Fed. Reg. at 75,370 (proposed to be codified at 40 C.F.R. § 86.1818-12 (h)) (“Mid-term evaluation of standards. No later than April 1, 2018, the Administrator shall determine whether the standards established in paragraph (c) of this section for the 2022 through 2025 model years are appropriate under section 202(a) of the Clean Air Act, in light of the record then before the Administrator. An opportunity for public comment shall be provided before making such determination. If the Administrator determines they are not appropriate, the Administrator shall initiate a rulemaking to revise the standards, to be either more or less stringent as appropriate.”).

As it is, agencies may not violate their own rules and regulations to the prejudice of others. See *United States ex rel. Accardi v. Shaughnessy*, 347 U.S. 260, 267 (1954); *Steenholdt v. F.A.A.*, 314 F.3d 633, 639 (D.C. Cir. 2003) (“The Accardi doctrine requires federal agencies to follow their own rules, even gratuitous procedural rules that limit otherwise discretionary actions.”). [EPA-HQ-OAR-2010-0799-9495-A1, p. 7]

The factors to be considered at the mid-term evaluation are the same as those that the agencies are obliged to consider in initially setting standards under their respective authorities. See 76 Fed. Reg. at 75,370 (proposed to be codified at 40 C.F.R. § 86.1818-12 (h)) (listing factors EPA must consider, including cost to producers and purchasers, as well as the feasibility and practicability of the standards and the impact of the standards on the automobile industry). Under EPCA, the Secretary is to consider “technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy.” 49 U.S.C. § 32902(f). [EPA-HQ-OAR-2010-0799-9495-A1, p. 7]

NHTSA has interpreted economic practicability to include consideration of consumer choice, economic hardship for the automobile industry, and vehicle safety. 76 Fed. Reg. at 74,897 (footnote omitted) (discussing NHTSA approach to economic practicability under EPCA and explaining: “Consumer acceptability is also an element of economic practicability, one which is particularly difficult to gauge during times of uncertain fuel prices.”); see also *CEI I*, 901 F.2d at 120, n.11; *Center for Auto Safety v. NHTSA*, 793 F.2d 1322, 1340 (D.C. Cir. 1986). [EPA-HQ-OAR-2010-0799-9495-A1, p. 7]

Under Section 202 of the Clean Air Act, EPA emissions standards:

“shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.” 42 U.S.C. § 7521(a)(2). [EPA-HQ-OAR-2010-0799-9495-A1, p. 8]

EPA has also acknowledged, at least as to choices among vehicles, the relevance of consumer acceptance in evaluating these factors. See MY 2012-2016 Final Rule, 75 Fed. Reg. 25,324, 25,467 (“Consumer choice remains a pertinent factor for EPA to consider in balancing the relevant statutory factors,” citing *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 640 (D.C. Cir. 1973)). In *International Harvester*, the court of appeals, recognizing that “[a]significant decrease in auto production will have a major economic impact on labor and suppliers to the [automobile] companies,” concluded that the Administrator is required to consider issues of basic demand for new passenger vehicles in making technical feasibility and lead time determinations. *Id.* at 641. [EPA-HQ-OAR-2010-0799-9495-A1, p. 8]

Under Section 202, EPA also must consider safety impacts:

“...[N]o emission control device, system, or element of design shall be used in a new motor vehicle or new motor vehicle engine for purposes of complying with requirements prescribed under this subchapter if such device, system, or element of design will cause or contribute to an unreasonable risk to public health, welfare, or safety in its operation or function.” 42 U.S.C. § 7521(a)(4)(A) (emphasis added). [EPA-HQ-OAR-2010-0799-9495-A1, p. 8]

As it is, the factors of “the requisite technology” and “appropriate consideration to the cost of compliance within such period” encompass the issues related to infrastructure, technology cost, consumer acceptance, and the other factors that the proposed rule directs EPA to consider. [EPA-HQ-OAR-2010-0799-9495-A1, p. 8]

The mid-term evaluation contemplates coordination between EPA and NHTSA, just as they have coordinated in developing the MY 2012-2016 rule and in developing the MY 2017-2025 proposal. Indeed, the United States Supreme Court has recognized that while the agencies’ “obligations may overlap, . . . there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.” *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007). [EPA-HQ-OAR-2010-0799-9495-A1, p. 8]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 53.]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 60.]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 25-26.]

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We believe the midterm review is critical to determining whether the customer's buying, and will continue to buy the technology packages needed to comply with the standards year over year. Efforts to search for parameters that measure potential customer acceptance must not lose sight of the most important question: Are they buying the product? Measuring whether consumers will buy what we offer next year is already challenging. Speculating as far as 13 years in the future holds significant uncertainty and risk. A midterm assessment of the underlying rulemaking assumptions provides a critical and equitable mechanism to adjust standards for future consumer and technology uncertainties and is a primary reason Chrysler supports this program.

Organization: Consumer Federation of America (CFA)

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 91-92.]

And finally, sixth, the proposed rule recognizes the need to stay in touch with reality.

So we have this midterm review, which I fully support, as you've heard the auto makers insist on it. But I actually believe when we get to the midterm review, we're as likely to increase the standards as decrease.

Because, one, we've used the very low gasoline price. And so I think it will be higher when we get there.

And, two, historically we've seen that the original projections of the cost of meeting technologies in every major standard proposed by this agency and NHTSA have always been too high.

Organization: Ecology Center

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 189.]

While we do have some concerns about the proposed mid-term review providing an opportunity to slow progress, we understand the need for potential adjustments due to many unknowns that far into the future. We are hopeful that such a review will show that even more progress is achievable.

Organization: EcoMotors International, Inc.

NHTSA is obligated to conduct a separate de novo rulemaking in order to establish final standards for MYs 2022-2025 vehicles. The agencies are therefore proposing to conduct a comprehensive midterm evaluation to assess the appropriateness of the MY 2022-2025 standards, based on an updated assessment of all the factors considered in setting the standards and the impacts of those factors on the manufacturers' ability to comply.

The auto industry faces great uncertainty over future technology developments and costs, customer acceptance of new technologies, and fuel prices. Additionally, it will require more than

just automotive production for emissions reductions from advanced technology vehicles to be realized. There must be a national fueling and service infrastructure available to support these technologies if they are to achieve significant market penetration. Developing and establishing this infrastructure for the nation and establishing consumer confidence in new technologies will take time. All of these factors make it critical that OEMs foresee the ability to cope with unexpected events and changes. Given the uncertainty inherent in setting standards over such a long time period, EcoMotors supports the agencies' plans to conduct a coordinated mid-term evaluation of the standards. [EPA-HQ-OAR-2010-0799-9594-A2, pp. 13-14]

- **Specific Recommendation:** Conduct a coordinated mid-term evaluation, as proposed.

We look forward to further developments in this rulemaking. [EPA-HQ-OAR-2010-0799-9594-A2, p. 14]

Organization: Ferrari

Finally, it is essential for EPA and NHTSA to conduct a comprehensive mid-term evaluation, taking into account the long period covered by the proposed regulations, regardless the legal obligations for NHTSA. [EPA-HQ-OAR-2010-0799-9535-A2, p.10]

Organization: Ford Motor Company

- **Mid term Evaluation:** The proposal provides for a thorough mid-term evaluation, by no later than April 2018, to assess the appropriateness of the targets for model years 2022 through 2025. This provision is essential and must be maintained in the final rule. The market success of our industry, and hence that of our new and innovative products, is dependent upon many factors outside of our control, such as the price of fuel, the state of the economy, or the availability of affordable technologies and materials (for example, to support electrification, or light-weighting). The further we look into the future, the more difficult it is to predict these factors with accuracy. This is why the proposed mid-term evaluation of the 2022-2025 model year greenhouse gas standards is vital to this joint proposal. The mid-term evaluation provides an essential checkpoint to ensure that the standards for those model years are consistent with evolving market conditions. [EPA-HQ-OAR-2010-0799-9463-A1, pp. 2 and 5]

Mid-Term Evaluation

The proposed rules include provisions for a mid-term evaluation of the appropriateness of the MY 2022-2025 GHG standards. This mid-term evaluation is to be conducted concurrently with NHTSA's actions in setting final, enforceable standards for MYs 2022-2025. Under the proposal, EPA and NHTSA, along with CARB, will jointly prepare a draft Technical Assessment Report ('TAR') on the appropriateness and feasibility of the MY 2022-2025 GHG and Corporate Average Fuel Economy (CAFE) standards and make the report available to the public no later than November 15, 2017. The agencies will receive public comment on the TAR as well as the standards themselves. EPA will then determine, by April 1, 2018, whether the MY 2022-2025 standards are appropriate, taking into account a number of factors, including but not limited to

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factors specified in the regulatory language. If EPA determines the MY 2022-2025 standards are appropriate, it will issue a final decision to that effect, which will be judicially reviewable. If EPA determines the MY 2022-2025 standards are not appropriate, it will initiate a rulemaking to adopt appropriate standards under Section 202(a) of the Clean Air Act, and any final rule resulting from that process would also be judicially reviewable. Any such rulemaking would be conducted jointly with NHTSA's de novo notice-and-comment rulemaking to set final CAFE standards for MYs 2022-2025. Both agencies would presumably issue final standards for MYs 2022-2025 on or before April 1, 2020, which would provide the minimum allowable lead time for the MY 2022 standards under the CAFE law. [EPA-HQ-OAR-2010-0799-9463-A1, p. 6]

Given the extended timeframe for the rules, the mid-term evaluation provisions are essential to Ford's support of this rulemaking package. The proposed standards for model years 2022-2025 are premised on projected developments in fuel economy technology, anticipated improvements in infrastructure to support new kinds of powertrains, the willingness of consumers to accept new technologies, and other factors. To the extent that these assumptions turn out to be incorrect, adjustments to the MY 2022-2025 standards may be necessary. The mid-term evaluation provides a vital checkpoint to ensure that the MY 2022-2025 standards are realistic and that the manufacturers have a workable pathway to compliance. It is also essential that the agency decisions emerging from the mid-term evaluation be judicially reviewable. While we think it is unlikely that the agency's mid-term evaluation determination will be challenged in court, the possibility of such a challenge helps to ensure that the evaluation process will be robust and that the agencies will give full consideration to all comments. [EPA-HQ-OAR-2010-0799-9463-A1, p. 6]

Ford supports the mid-term evaluation provisions as proposed by EPA. We also offer the following comments, which are fully consistent with the existing provisions: [EPA-HQ-OAR-2010-0799-9463-A1, p. 6]

- **Timing.** In conducting the mid-term evaluation, it is very important that the agencies meet (if not beat) the deadlines set forth in the proposed rules. The TAR must be issued on time to allow for a reasonable public comment period, and the public comment period must be completed in a timely fashion for EPA to meet its April 1, 2018 deadline for making its determination. That deadline, in turn, must be met in case EPA needs to undertake a joint rulemaking with NHTSA to set new standards for MYs 2022-2025 and complete that rulemaking by April 1, 2020, which is NHTSA's statutory deadline for setting MY 2022 CAFE standards. If the mid-term evaluation process is allowed to lag, stakeholders who are concerned about the appropriateness of the MY 2022-2025 standards may have little choice but to initiate 'deadline' litigation or take other actions they believe to be consistent with their interests. If this occurs, the goal of an orderly, thoughtful mid-term evaluation process could be thwarted. Adherence to the timing set forth in the proposal is critical. [EPA-HQ-OAR-2010-0799-9463-A1, pp. 6-7]
- **Coordination between EPA and NHTSA.** Closely related to the timing issue is the importance of close coordination between EPA and NHTSA during the mid-term evaluation process. Consistent with the overarching goals of the One National Program framework, the midterm evaluation process needs to result in a joint rulemaking with harmonized CAFE and GHG standards for MYs 2022-2025. The harmonized standards

should enable manufacturers to comply with both their GHG and CAFE obligations by building one fleet of vehicles that can be sold nationwide. In order to accomplish this, the degree of coordination between EPA and NHTSA during the mid-term evaluation needs to be no less than the degree of coordination involved in the pending joint rulemaking. The mid-term evaluation should not be viewed as an opportunity for EPA and NHTSA to go in different directions with respect to the GHG and CAFE standards. [EPA-HQ-OAR-2010-0799-9463-A1, p. 7]

- Factors to be considered. The proposed mid-term evaluation provision states that '...the Administrator shall consider information available on the factors relevant to setting greenhouse gas emission standards under Section 202(a) of the Clean Air Act for model years 2022 through 2025, including but not limited to...' *emphasis added+. The provision goes on to list a number of specific factors that the Administrator must consider. In Ford's view, the 'including but not limited to' language is an essential part of the mid-term review provisions. The factors that turn out to be most important six years from now are not necessarily foreseeable today, and not necessarily the ones listed in the proposed rule. As we understand the language, EPA must be open to the consideration of relevant factors not specifically listed, including relevant factors that may be raised in public comments received by the agencies. We urge EPA to maintain this language in the final rule, so that the midterm evaluation is as robust and comprehensive as possible. [EPA-HQ-OAR-2010-0799-9463-A1, p. 7]
- Holistic View. As part of the mid-term evaluation, the Agencies should take a broad view of the opportunities for reducing transportation-related CO₂ emissions and fuel consumption, with an eye toward determining whether it may be necessary to implement measures external to the auto industry in order to support and complement the vehicle standards. A holistic approach to GHG reduction and fuel savings has the potential to be much more effective than a tunnel-vision focus on vehicles alone. Along these lines, we direct your attention to comments submitted by the University of Michigan (Chock, Gonzalez, Zeilinski) regarding the importance of considering the role of consumer fuel usage as part of any effort to establish policies and regulations related to GHG emissions. Ford has been, and continues to be, actively involved in dialogue with a variety of entities (including governments, academic institutions, and NGOs) on such subjects as urban planning, congestion reduction, fueling infrastructure, and connectivity technologies to facilitate more efficient public and private transport. The ability of manufacturers to achieve the proposed vehicle standards may in part depend on the degree of progress our society is able to achieve in one or more of these other areas. Also, market fuel quality, particularly octane level, can have a significantly positive impact on all on-road vehicles and should therefore be a key part of our national strategy to improve energy security. These issues need to be on the table as part of the mid-term evaluation. [EPA-HQ-OAR-2010-0799-9463-A1, p. 7]

On balance, we believe that the proposed mid-term evaluation provisions set forth a meaningful and reasonable process for revisiting the appropriateness of the proposed MY 2022-2025 standards, with the benefit of the information gathered in the intervening years. Ford supports the inclusion of these provisions in the final rule, and we pledge to work with the agencies in a

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constructive manner toward final MY 2022-2025 standards that are workable and appropriate. [EPA-HQ-OAR-2010-0799-9463-A1, p. 8]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 45.]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 34.]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 86-87.]

This is why the proposed midterm evaluation of the 2022 to 2025 standards is so vital to this joint proposal. As proposed, the midterm evaluation provisions require EPA to make a fresh determination regarding the appropriateness of the post-2021 model year standards after considering a variety of factors and soliciting public comments. This process will take place concurrently with NHTSA's process for setting final standards for the 2022 to 2025 model years. The midterm evaluation is an essential checkpoint to ensure that the standards for these model years are consistent with evolving market conditions. The existence of a robust, meaningful midterm evaluation process is critical to Ford's support for this rulemaking package.

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 44-47.]

The proposed rule extends to the 2025 model year which is an unprecedented time frame in the context of fuel economy regulations. This presents a significant challenge for manufacturers. While the establishment of longer-term standards provide manufacturers with targets for future product planning investment, the longer time frame leads to greater risk that the assumptions underlying the standards do not come to fruition.

Organization: General Motors Company

GM understands that the 2022-2025 standards will be evaluated further during the mid-term review. [EPA-HQ-OAR-2010-0799-9465-A1, p. 2]

GM supports an in-depth mid-term evaluation, and urges as well, a continuing open dialogue among industry and other affected parties, including a series of earlier, focused, technical evaluations, or “check-ins”, on the key assumptions upon which the proposed standards are based. [EPA-HQ-OAR-2010-0799-9465-A1, p. 2]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 35-38, and 56.]

As this proposal makes many optimistic assumptions and sets goals all the way out to 2025, 13 years from today, it is imperative that we collectively check the validity of those assumptions as we move through that extended period of time. We suggest not only one formal mid-term review

as the agencies themselves have planned for the proposal, but a series of smaller technical and detailed focused check-ins on the key assumptions contained in this proposal. These check-ins will allow the program to stay on track and lead to the best long-term results. Of course, the more formal mid-term review is also essential since NHTSA must itself conduct a separate rulemaking to set the requirements under the CAFE law for the final four years of this period.

But you have my commitment that we will provide whatever data, analysis, and input we can to help the agencies to make judgments and course corrections along the way.

Clearly this proposal represents a dramatic attempt to advance the mutual goals of CO₂ reduction and increased energy diversity. The mid-term review is essential to make sure that we also revisit the assumptions inherent in establishing these goals to make sure we have not overwhelmed technology development or the needs of consumers or their willingness to accept and pay for the associated changes in vehicles.

Organization: Honeywell International, Inc.

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 258.]

As the agencies recognize, turbo technologies will contribute significantly during the model years covered by this rulemaking, the agencies should commit during the mid-term review to evaluate the availability of more advanced turbo technologies and to ensure an equal production incentive as any ongoing incentive provided to battery technology.

Organization: Honeywell Transportation Systems

Honeywell also encourages the agencies to commit in the final rule to a detailed review of emerging boosting technologies that may considerably advance vehicle emissions and fuel economy performance during the later years of the rulemaking. The agencies have already committed within the mid-term review to consider powertrain improvements to diesel and gasoline powered vehicles. New, advanced turbo technologies can facilitate those improvements and may be ripe for regulatory consideration during the time when the agencies intend to conduct the mid-term review. [EPA-HQ-OAR-2010-0799-9474-A1, p.6]

Honeywell's research and development into turbo advancements continues. We expect to contribute significantly to support emissions and fuel economy improvements in both the light duty and heavy duty fleets during the upcoming model years. We are investing in yet more advanced approaches that we expect will allow diesel and gasoline vehicles to compete favorably in the marketplace while substantially advancing their environmental performance. While many of these technologies are not yet available for regulatory consideration, we anticipate that new, additional turbo technologies will be on the technology menu during the mid-term review. [EPA-HQ-OAR-2010-0799-9474-A1, p.6]

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The agencies' consideration of additional flexibilities and credits in the mid-term review should include such technologies. While the agencies will reconsider the viability of any incentives provided to electric drivetrains in the upcoming final rule, the agencies at the same time should consider providing equal treatment to ICE vehicles incorporating the boosting technologies that may be ripe for emergence during the model year 2022-2025 timeframe. [EPA-HQ-OAR-2010-0799-9474-A1, p.6]

Honeywell also requests that the agencies commit to ensuring that future turbocharging technology be accorded full consideration and treatment analogous to electric drivetrain technology during the mid-term review. [EPA-HQ-OAR-2010-0799-9474-A1, [p.6]

Organization: House of Representatives, Congress of the United States

In addition, we were pleased that the Administration intends to include a 'midterm' review for the 2022-2025 requirements. This provides an opportunity for the last set of increases to be revisited to see if the assumptions on technology, costs, fuel prices, consumer acceptance and vehicle prices still support the standards that will be proposed, or whether their stringency should be revised upwards or downwards. [EPA-HQ-OAR-2010-0799-1221-A1, p. 1]

Organization: Hyundai America Technical Center

The agencies are proposing a comprehensive mid-term review prior to the final adoption of the MY 2022-2025 standards by NHTSA. Hyundai supports the standards as proposed and appreciates the substantial lead time provided by the regulations which will provide stability for long-term product planning. At the same time, the proposal covers nine model years, out to MY 2025, which makes it difficult to make accurate assumptions due to market uncertainties such as the price and viability of different fuel types, infrastructure availability, technology availability, technology penetration rates and cost, and consumer acceptance of technology. Therefore, Hyundai supports the mid-term evaluation because it provides an opportunity to ensure that the details of the program are appropriate and that the requirements are sound closer to the time of implementation. [EPA-HQ-OAR-2010-0799-9547-A1, p.2]

[These comments were also submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 173.]

[These comments were also submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 23.]

We agree with the comments by Global Automakers that the final rule should specify a clearly defined process for the mid-term review with a set of specific questions that should be addressed. Additionally, we also support additional informal periodic reviews to monitor areas such as the state of technology, the effect of the proposed incentives and the viability of testing methods. [EPA-HQ-OAR-2010-0799-9547-A1, p.2]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 173-174.]

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 24.]

Although we believe the proposed requirements are feasible, Hyundai recognizes that it is difficult to accurately predict out to the 2025 time frame the technologies and the cost and consumer acceptance of these technologies that will be necessary.

The mid-term review will help ensure that the requirements are sound closer to the time of implementation.

Organization: Institute for Policy Integrity, New York University School of Law

Factors for the Mid-Term Evaluation Should Specifically Include Benefit Estimate Revisions
The agencies should commit to developing better estimates of non-carbon dioxide benefits during the SCC revision process, ideally in time to incorporate such estimates in the final rulemaking.

Periodic review of ongoing regulations is a valuable check on efficiency,⁷³ and the practice is now enshrined in executive order.⁷⁴ The agencies' plan to conduct a mid-term evaluation of the rule in advance of model year 2022 is commendable. Unfortunately, EPA's list of relevant factors to consider during this review process lacks key elements. While there is a catch-all listing of "other factors," there is no specific mention of reviewing any changes in benefits estimates, such as any revised SCC values. The agencies should amend their list of factors to specifically reflect any potential changes to benefits estimates, in addition to changes to costs or the state of technology. [EPA-HQ-OAR-2010-0799-9480-A1, p. 11]

⁷³ See Comments from Policy Integrity to EPA and DOT on Retrospective Review (Mar. 18, 2011, Apr. 1, 2011, June 27, 2011, July 3, 2011), available at <http://www.policyintegrity.org>.

⁷⁴ Exec. Order 13,563 § 6.

Organization: International Council on Clean Transportation (ICCT)

10. ICCT enthusiastically supports a midterm review, as we believe it will find that costs have been significantly overstated. The criteria and analyses used for the midterm review should be similar to those used for any CAFE or greenhouse gas rulemaking process. EPA and NHTSA should also provide periodic status updates on technology progress and the results of additional benefit and cost analyses. [EPA-HQ-OAR-2010-0799-9512-A1, p. 3]

10) Mid-Term Review

The ICCT enthusiastically supports a midterm review, as we believe the proposed rule significantly overstates the cost of compliance. Continued technology advancements will both

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increase the benefits of many technologies, such that not as much technology would need to be installed, and reduce the cost of technologies that are used. Capturing these future improvements in the midterm review will allow the agencies to increase the stringency of the 2022-2025 standards. [EPA-HQ-OAR-2010-0799-9512-A1, p. 22]

The process for the midterm review is critical to the 2022-25 standards. It is impossible to define all the criteria for the review at this time, just as it is not possible to define all of the criteria for any rulemaking process. EPA and NHTSA need latitude to apply their best analyses and base the requirements on the results of these analyses. The ICCT believes that the criteria and analyses used for the midterm review should be similar to those used for any CAFE or GHG rulemaking process. [EPA-HQ-OAR-2010-0799-9512-A1, pp. 22-23]

The ICCT also recommends that EPA and NHTSA conduct periodic updates on technology progress and consider periodic status reports. Tear-down cost assessments should continue in order to assess the cost of newer technologies as they are introduced into the market. Simulation modeling also needs to be updated to keep pace with technology development. The scope and timing of reports should be up to the Agencies, but we see value in documenting progress in technology improvements and implementation. Manufacturers do not release details of their technology development, so periodic reports can summarize technology and cost developments and technology deployment for all interested parties, including other manufacturers. The ICCT also expects continued improvement in the science of assessing technology benefits and costs, which can be disseminated through the periodic progress reports. Forward-looking analyses would provide a better foundation going into the midterm review and should be updated as appropriate. [EPA-HQ-OAR-2010-0799-9512-A1, p. 23]

Organization: Johnson Controls, Inc.

Johnson Controls also supports the agencies' inclusion of a mid-term evaluation, which, as proposed, will provide all stakeholders with a comprehensive analysis so they may consider the current performance and ability to realistically deliver the MY 2017-2025 standards in the public docket. Long-term planning is an especially important factor in the battery industry as there are likely to be uncertainties in the product development cycle that could directly impact - positively or negatively - the commercial success of new products, as well as the return on investment required to expand the U.S. manufacturing base. Providing an opportunity for a thorough analysis is a critical and necessary component of this next National Program. [NHTSA-2010-0131-0253-A1, pp. 2-3]

Midterm Review should be supplemented by ongoing review and analysis during the course of the National Program. Midterm review is a critical component for this next National Program which covers eight years. Since the commencement of the midterm 'review is in the distant future, the industry encourages the agencies to be open to ongoing shared analysis and input to assess if the goals of the Program are being realized and/or if there are circumstances that drastically impact the marketplace or technology development. [NHTSA-2010-0131-0253-A1, p. 5]

Organization: Kia Motors

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 102.]

Kia appreciates these substantial lead times for these regulations which will provide stability in long-term planning. However, Kia believes it is important for the agencies to include mid-term evaluations to allow for revisions if some of the assumptions made in the drafting of the rule are not proven to be correct. Even though Kia supports the standards, Kia recognizes it is difficult to accurately predict the outcome -- to accurately predict how to deliver the 2025 technology in that time frame. Consumer acceptance of those technologies and costs will also be a challenge. The mid-term review will help us ensure that the standards are robust for all OEMs near to the time frame of implementation.

Organization: Marshall, C.

The idea of a review of the regulation in 2021 is a good concept but I think the lead-times for the vehicle manufacturing industry to retool are so long that I would suggest the review be held in 2019. [EPA-HQ-OAR-2010-0799-5917-A2, p. 1]

Organization: Mass Comment Campaign (20,500) (Union of Concerned Scientists-3)

The agencies are proposing a 'mid-term' review that would begin soon after the standards come into effect. In the past, automakers have abused similar programs--turning them into off-ramps as opposed to reviews. It is critical that this review does not undermine the program through 2025. [EPA-HQ-OAR-2010-0799-10166-A2_MASS, p.1]

Organization: Mass Comment Campaign (375) (Union of Concerned Scientists-2)

The agencies are proposing a 'mid-term' review that would begin soon after the standards come into effect. In the past, automakers have abused similar programs--turning them into off-ramps as opposed to reviews. It is critical that this review does not undermine the program through 2025. [EPA-HQ-OAR-2010-0799-1246-A1_MASS, p.1]

Organization: Mass Comment Campaign (9,570) (Unknown Organization)

The agencies are proposing a 'mid-term' review that would begin soon after the standards come into effect. In the past, automakers have abused similar programs--turning them into off-ramps as opposed to reviews. It is critical that this review does not undermine the program through 2025. [EPA-HQ-OAR-2010-0799-9578-A1_MASS, p.1]

Organization: Mercedes-Benz USA, LLC

The mid-term review is critical to ensuring that the program remains feasible and is achieving GHG and fuel economy reductions without creating unintended economic, market and/or safety consequences. DAG strongly endorses the comments of the Auto Alliance with regard to the

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mid-term review. In addition to the various 'unknowns' identified in the Alliance comments, the mid-term review is essential to evaluate the structure of the program as applied to companies needing to expand their product offerings beyond the addition of advanced technology vehicles. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-2]

DAG also encourages the agencies to engage in periodic evaluations, in addition to the more formal and comprehensive mid-term review, to appraise (1) the extent to which the market has sustained the continued growth of hybrid vehicles and has accepted electric vehicles, (2) the extent to which the infrastructure to support battery electric, fuel cell and CNG vehicles has grown, and (3) whether efforts to meet the standards have resulted in adverse market or economic losses or product withdrawals. [EPA-HQ-OAR-2010-0799-9483-A1, p. A-2]

Organization: Mitsubishi Motors R&D of America, Inc. (MRDA)

Supports the inclusion of a mid-term evaluation as fundamental for setting realistic fuel economy and GHG stringency levels for MYs 2022 through 2025. Recommends that effects of consumer incentives and EV charging infrastructure must be considered in the mid-term evaluation. [EPA-HQ-OAR-2010-0799-9507-A1, p.2]

Mitsubishi Motors fully supports the mid-term evaluation, included in proposed language in Section 86.1818–12(h), in preparation for setting fuel economy and GHG standards for MYs 2022 through 2025. This is not only necessary, but fundamental to setting informed and practical standards that account for the realities of the U.S. market. Mitsubishi Motors believes the following factors must be considered and incorporated into the mid-term evaluation: [EPA-HQ-OAR-2010-0799-9507-A1, p.2]

- · What are fuel price trends as compared to what was projected? [EPA-HQ-OAR-2010-0799-9507-A1, p.2]
- · Are consumers buying more fuel efficient vehicles in general? [EPA-HQ-OAR-2010-0799-9507-A1, p.2]
- · Does sufficient EV infrastructure exist to support current and future EV adoption? Have consumers adopted EVs in the numbers as projected by the agencies in the analysis done for the NPRM? [EPA-HQ-OAR-2010-0799-9507-A1, p.2]
- · Have there been any significant industry-wide economic setbacks making EV and overall fuel economy targets as proposed in the NPRM impracticable? [EPA-HQ-OAR-2010-0799-9507-A1, p.3]
- · Are financial and non-financial incentives and compliance flexibilities still necessary to continue to advance adoption of EVs? [EPA-HQ-OAR-2010-0799-9507-A1, p.3]
- · Have there been significant advances in smart grid development, energy management and battery storage? [EPA-HQ-OAR-2010-0799-9507-A1, p.3]

This is not an exhaustive list. Given our significant investment and commitment to EV commercialization, these are important areas of concern for Mitsubishi Motors in the MY 2022 through 2025 timeframe. After a thorough analysis and consideration of all necessary factors, CAFE and GHG stringency levels for MYs 2022 through 2025 should be set accordingly. [EPA-HQ-OAR-2010-0799-9507-A1, p.3]

The agencies have never proposed fuel economy (or GHG) regulations that reach 13 model years into the future. Additionally, the agencies' target for finalizing this rule will be well before NHTSA's statutory requirement of publishing finalized requirements at least 18 months prior to the beginning of a MY. This unprecedented lead time lends itself to more questions rather than providing certainty for OEMs. [EPA-HQ-OAR-2010-0799-9507-A1, p.3]

Additionally, the mid-term evaluation is necessary since the product plans for MYs 2016 through 2020 are not as well-defined as the product plans for MYs 2010-2015. And, no OEM has detailed product plans for MYs 2021 through 2025. Although the product cycle development begins nearly 10 years before the launch of a vehicle, the commitment to product plans does not happen 10 years in advance. Product plans are set in general for approximately five years at a time. Projecting beyond five years in the future presents incremental uncertainties that those projections can be fulfilled for a number of reasons. The mid-term evaluation will help ensure that substantive analysis, rather than incrementally uncertain assumptions, support progressive yet realistic targets for the later years of this rulemaking. [EPA-HQ-OAR-2010-0799-9507-A1, p.3]

Much of the uncertainty involves making realistic assumptions for consumer acceptance of alternative fueled vehicles (AFVs) for MYs 2022 through 2025. In order to make accurate assumptions for this timeframe, NHTSA and EPA must evaluate consumer choices made during MYs 2017 through 2021. Given historical adoption rates of advanced technology vehicles, there needs to be a thorough evaluation for an EV multiplier in MYs 2022 through 2025 in order to continue to advance EV market penetration. [EPA-HQ-OAR-2010-0799-9507-A1, p.3]

To spur EV industry investment, President Obama established a national goal of 1 million electric vehicles on the road by 2015. Localities like the twin cities of Bloomington and Normal in central Illinois are working with Mitsubishi Motors and the Eaton Corporation through the EV Task Force to educate consumers, install EV charging infrastructure and deploy 1,000 Mitsubishi "i"s by 2014. OEMs are planning for significant increases in consumer adoption rates of EVs and PHEVs. These progressive targets and plans are noteworthy and encouraging. Ultimately however, only consumers can fulfill these plans. EPA should account for uncertainty regarding consumer acceptance by extending the EV multiplier in MYs 2022 through 2025. This will help sustain progress towards establishing a mass EV market. [EPA-HQ-OAR-2010-0799-9507-A1, p.3]

Overall, NHTSA's Preliminary Regulatory Impact Analysis (PRIA) suggests that this rulemaking is economically practicable for the industry as a whole. Yet, details in the PRIA indicate that manufacturers' costs to incorporate advanced technology in vehicles vary greatly. Specifically, Table VII-1a (estimated average cost per passenger car over the adjusted baseline for MYs 2017 through 2025) in the PRIA projects that Mitsubishi Motors' projected costs are higher than any other manufacturer. By 2025, they are projected to be more than three times greater than the average. [EPA-HQ-OAR-2010-0799-9507-A1, p.3]

It is evident and expected that some companies will be absorbing more incremental costs to remain price competitive, especially manufacturers with fewer product lines. Some increased

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material and component costs can be passed onto a consumer. However, Mitsubishi Motors strives to offer competitively priced vehicles, and like other manufacturers, endeavors to limit transferring costs to consumers. In addition, some manufacturers, because of size and product mix, continually face unique challenges. To that end, the agencies requested comments related to challenges that “intermediate volume limited line manufacturers” may face in meeting the fuel economy and GHG standards for MYs 2022 through 2025. As noted in the NPRM, these challenges include securing competitive supplier contracts and having limited product lines across which to spread costs. Mitsubishi Motors’ light duty vehicle sales account for approximately 0.6% of the U.S. market. As a manufacturer with more limited resources than many others in the U.S. market, adding advanced technologies to all vehicle models simultaneously is not feasible or practical. The mid-term evaluation should include consideration of compliance options specifically for OEMs with limited product lines. [EPA-HQ-OAR-2010-0799-9507-A1, pp.3-4]

In the mid-term evaluation, the agencies should also review assumptions about EV market penetration based on the availability and effect of consumer purchasing incentives. Although outside the scope of this rulemaking, EV incentives will continue to be a pivotal factor in spurring EV growth towards a mass market option. Mandating fuel efficiency and GHG emissions standards will not guarantee that a consumer will choose an electric drive vehicle. Pricing and charging infrastructure availability will be the main drivers in purchasing an EV. Financial and nonfinancial consumer incentives at the federal/state/local levels are necessary in the early stages of introduction for a distinct and new technology for most customers. It should be noted that relying on government tax incentives is not and cannot be a part of a sustainable long-term business plan for OEMs selling electric drive vehicles. However, if this technology is to become a significant part of the overall fleet, then government tax incentives are necessary for the beginning stages of commercialization. [EPA-HQ-OAR-2010-0799-9507-A1, p.4]

The mid-term evaluation should also consider available EV infrastructure when assessing past and future assumptions of EV market penetration. As noted above, charging infrastructure availability is key to a consumer’s decision to purchase an EV. Currently, there is no national plan for EV infrastructure development to compliment the federal government’s efforts to support EV industry growth and consumer acceptance of EVs. A national plan would help develop regional targets to establish EV infrastructure. Specifically, Mitsubishi Motors believes that EV charging infrastructure should be developed and prioritized according to the following: [EPA-HQ-OAR-2010-0799-9507-A1, p.4]

1. Home charging is the top priority and permitting processes must be streamlined. [EPA-HQ-OAR-2010-0799-9507-A1, p.4]
2. Workplace charging is the next priority because this supports increased EV adoption and enables future Vehicle to Grid energy storage concepts. [EPA-HQ-OAR-2010-0799-9507-A1, p.4]
3. Public Charging, especially DC quick charging, encourages adoption of EVs with smaller-sized, more resource efficient battery packs by increasing a vehicle’s effective daily range. [EPA-HQ-OAR-2010-0799-9507-A1, p.4]

OEMs must be able to innovate while complying with practicable federal fuel efficiency and GHG regulations to match the realities of the U.S. market. Mitsubishi Motors supports the inclusion of a mid-term evaluation in order to realistically evaluate the assumptions for setting fuel economy and GHG standards in MYs 2022 through 2025. [EPA-HQ-OAR-2010-0799-9507-A1, p. 6]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 96.]

Mitsubishi Motors urges the agency to work with stakeholders well in advance of the midterm evaluation to develop sound review process and framework.

Organization: Motor & Equipment Manufacturers Association (MEMA)

MEMA also strongly supports the agencies' inclusion of a mid-term evaluation. That way, all stakeholders can perform a comprehensive and transparent assessment to see if the goals of the Program are being realized and/or if there are circumstances that drastically impact the marketplace or technology development, which may call for appropriate revisions. [EPA-HQ-OAR-2010-0799-9478-A1, p.2]

Midterm Review is a key component of the National Program for MYs2017-2025. We support an assessment to ensure that the goals are being realized and/or to address any circumstances that drastically impact the marketplace or technology development to warrant revisions. [EPA-HQ-OAR-2010-0799-9478-A1, p.2]

MEMA strongly supports the agencies' inclusion of a mid-term evaluation, which, as proposed, will provide a complete comprehensive analysis for all stakeholders to consider the current state-of-play and practicability of the MY2017-2025 standards in the public docket. Long-term planning is an especially important factor in the motor vehicle industry as there are likely to be uncertainties in the product development cycle that could directly impact – positively or negatively – the commercial success of new products and the return on investment required to expand the U.S. manufacturing base. Outside of the formal midterm review, it seems reasonable that there should be an ongoing dialogue between all of the stakeholders leading up to the midterm review. [EPA-HQ-OAR-2010-0799-9478-A1, p.5]

MEMA supports a complete assessment of the Program to ensure that the goals are being realized and/or if there are any circumstances that drastically impact the marketplace or technology development to warrant revisions to the standards. Providing an opportunity for a thorough analysis is a critical and necessary component of this next National Program. [EPA-HQ-OAR-2010-0799-9478-A1, p.5]

Organization: National Association of Clean Air Agencies (NACAA)

Further, once this program is in place, it is critical that EPA and NHTSA closely track progress in meeting the standards. In addition, the mid-term evaluation to be conducted in the 2021-2022

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timeframe should evaluate the use of credits by automobile manufacturers and the impact of credit use on average fleet performance. In particular, EPA and NHTSA should evaluate whether credit use is allowing the production of a greater number of vehicles that do not meet the 5-percent rate of improvement requirement. [EPA-HQ-OAR-2010-0799-8084-A1, p. 3]

[These comments were also submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, pp. 40-41.]

[These comments were also submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 35-36.]

Organization: National Association of Manufacturers (NAM)

The NAM submits these comments to address one specific substantive aspect of the proposed rule: the mid-term evaluation program. As described below, the NAM supports the inclusion of a mid-term evaluation cycle but has a number of concerns regarding the content of the review and the procedures through which it will be implemented. We urge the EPA to clarify the content of the evaluation and the procedural details of the evaluation and to add additional time to the review process so that the EPA can complete a revised rulemaking with sufficient lead time to allow regulated entities to achieve compliance. [EPA-HQ-OAR-2010-0799-9538-A2, p. 1]

The Agencies Should Adhere to the Mid-Term Evaluation Process to Ensure That Regulated Entities Are Not Subject to Inappropriate Standards

The Associations fully support the Agencies' proposal to complete a mid-term evaluation of the appropriateness of the Model Year 2022-2025 standards. Estimates and projections of future costs and the pace of technological development made more than 10 years in advance are fraught with uncertainty and the risk of significant deviation from those projections is high. Therefore, a mid-term evaluation is appropriate so that the Agencies can make necessary adjustments to the standards to ensure the standards are cost-effective and capable of implementation. The Associations generally agree with the proposed content of the mid-term evaluation, particularly its focus on the cost and availability of advanced technologies, the standards' impact on vehicle safety, the effect on the economic health of the automotive industry, and "other relevant factors." While the Agencies need not develop an exhaustive list of relevant factors in advance, they should include those factors that will necessarily impact the automotive industry's ability to achieve the standards. For example, the Agencies should expressly require consideration of consumer purchasing patterns and acceptance of new technologies, the availability of alternative fuel infrastructure, and government responses to declining gasoline tax revenue as a result of increased fuel efficiency. [EPA-HQ-OAR-2010-0799-9538-A2, p. 2]

The Associations also have a number of procedural concerns about how the mid-term evaluation and subsequent rulemaking will be conducted. First, the proposed timeline for the review and promulgation of new standards is compressed and delays in the review process may threaten the industry's ability to comply with revised standards once they are issued. The proposed rule requires the Agencies to make a final determination regarding the appropriateness of the existing standards a mere 4.5 months after issuing the draft Technical Assessment Report. In this short

time period, the Agencies propose to complete a peer assessment of the draft report, solicit public comments on the draft report and the appropriateness of the existing standards, and respond to the peer assessment and public comments. The peer and public review are critical components of the mid-term evaluation and the Agencies must ensure that the comment process and their response are not rushed. If the Agencies find that the existing standards are inappropriate, they will have little more than two years to promulgate revised standards, leaving manufacturers with only 18 months to achieve compliance with the revised standards. While the schedule proposed by the Agencies will provide sufficient lead time to allow manufacturers to adjust to the revised standards, history has shown that rulemaking deadlines are often missed, meaning that manufacturers could be left with even less time to comply with the revised standards. As a result, we urge the Agencies to consider additional mechanisms to ensure that revised standards will be issued on schedule. For example, the Agencies could provide additional flexibility by beginning the review process earlier. To ensure the effectiveness of the review process, the Agencies should clarify and make judicially enforceable the proposed timeline and details of the public and peer reviews of the draft Technical Assessment Report. We also urge the Agencies to set a firm and judicially enforceable timeline (including a commencement date and intermediate milestones) for the development of the draft report to ensure that it is completed on schedule. With the addition of these procedural safeguards, we are confident that the Agencies will be able to complete the mid-term evaluation and subsequent rulemaking while adhering to the proposed timeline. [EPA-HQ-OAR-2010-0799-9538-A2, pp. 2-3]

Second, the Agencies should not take the default position that the existing 2022-2025 model year standards will remain in place unless changed by rulemaking. If the Agencies determine that the 2022-2025 standards are inappropriate, there is simply no reason to leave them in place during the subsequent rulemaking process. Instead the existing standards should be rescinded immediately upon a determination that they are inappropriate, leaving the 2021 standards in effect until revised standards are finalized. Otherwise, manufacturers would be required to comply with the inappropriate standards in the event that a subsequent rulemaking is not finalized by 2022. As noted above, there is always a risk that agencies will be unable to meet proposed timelines for review processes and rulemaking proceedings. Moreover, as EPA and NHTSA recognize, both the appropriateness determination and any subsequent rulemaking would be final agency action subject to judicial review. The proposed rule does not include an expedited review procedure and a challenge to either final agency action would add additional delay and threaten the Agencies' ability to complete a final rulemaking before 2022. In light of these risks, it would be arbitrary and capricious to leave the 2022-2025 standards in effect after they are determined to be inappropriate. [EPA-HQ-OAR-2010-0799-9538-A2, p. 3]

Organization: National Automobile Dealers Association (NADA)

The proposal contains a so-called 'mid-term evaluation' designed to allow for the reevaluation of the key regulatory assumptions. It defies logic that the proposal sets up the need for a 'mid-term evaluation' in the first place. In fact, NHTSA and EPA should not even be engaged in rulemaking at this time, so soon after having set standards for MYs 2012-2016, and before having had the benefit of learning from how those standards work in the real world. A prudent strategy would involve engaging in rulemaking in the calendar year 2014 time frame, aimed at

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setting standards for MYs 2017 through 2021 or 2022. Such a timetable would greatly reduce the likelihood that mandates will prove to be technologically infeasible or economically impractical. As evidenced by the truck emissions experience, NHTSA and EPA should strive to limit any risk of foreseeable harms and unforeseeable consequences. [EPA-HQ-OAR-2010-0799-9575-A1, p. 12]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 70.]

Sure, manufacturers need adequate time to achieve compliance. And as a businessman, dealers appreciate regulatory certainty, but we question whether setting fuel economy mandates so far out makes sense when critical variables like fuel prices, consumer behavior and creditworthiness are paramount. If anything, this contradicts Congress's intent that such standards be set in 5-year or fewer intervals. Moreover, any supposed certainty may be fleeting given the proposal's mid-term review could result in even stricter mandates for model years 2022 to 2025.

Organization: Natural Resources Defense Council (NRDC)

D. Mid-Term Evaluation Is Unnecessary but, If Used, Proposed Structure Is Appropriate

NRDC believes that the mid-term evaluation is unnecessary and potentially disruptive to automaker product planning. The mid-term review adds uncertainty to what is otherwise a nine-year planning horizon for the automakers. By cutting the planning time line roughly in half, the mid-term evaluation undermines investments in technology that will improve efficiency beyond 2021 required levels. The mid-term review could also disrupt the deployment of vehicle fueling infrastructure, for advanced vehicles such as plug-in electric vehicles and hydrogen fuel cell vehicles that may be on the verge of a rapid market growth in the post-2020 period. [EPA-HQ-OAR-2010-0799-9472-A2, p. 16]

As it is proposed, the mid-term evaluation follows an appropriate structure. There should be only a single mid-term evaluation to consider compliance with standards for just model years 2022 to 2025. The mid-term evaluation should consider the wide-range of factors that affect the automotive industry's ability to comply, including different technology pathways, credit mechanisms such as banking, trading and borrowing and market conditions. However, a decision to modify the standards should be based on weighing all factors and not mainly on a single factor, technology or market projection. [EPA-HQ-OAR-2010-0799-9472-A2, p. 16]

NRDC agrees that mid-term evaluation should occur as close as possible to the beginning of model year (MY) 2022 without violating the minimum 18 month leadtime. The close timing will ensure that recent advances in technology driven by the MY 2017-2021 standards will be considered in the evaluation. [EPA-HQ-OAR-2010-0799-9472-A2, p. 17]

We agree that an assessment of compliance and the development of a technical assessment report for the mid-term review should include the close coordination of all three regulatory agencies that have developed the National Program since 2009, including EPA, NHTSA and CARB. The

evaluation should also be open for public participation and comment consistent with this proposed rule. [EPA-HQ-OAR-2010-0799-9472-A2, p. 17]

Organization: Nissan North America, Inc.

Mid-Term Review: Nissan's commitment to the program is premised on a comprehensive mid-term evaluation for MYs 2022-2025. The standards are extremely aggressive, particularly with regard to the light truck fleet. The standards assume not only a significant amount of technology advancement, but also consumer acceptance and transformation of the vehicle fleet. For both the light truck and the passenger car fleets, the extent to which automobile manufacturers are able to meet these standards will depend not merely on their ability to cost-effectively incorporate additional and transformational technologies, but also on factors external to vehicle design and engineering. The mid-term evaluation is essential to ensuring that the standards remain technologically and economically feasible. A meaningful review, as set forth in the Notices of Intent and the proposal, to evaluate the full range of market, technology and regulatory factors for the later model years is not only essential, it is required by law. [EPA-HQ-OAR-2010-0799-9471-A1, p.2]

The Mid-Term Review is Essential to Ensure that the Assumptions Underlying the Proposal are Valid for the Later Model Years

The proposed standards are extremely ambitious. Success in meeting these standards will depend not only on the deployment of advanced technologies and materials, but also on consumer demand shifts and the economic vitality of the U.S. market. The technological and economic uncertainties inherent in setting standards so far into the future make a robust mid-term review an essential element of the program. Only through a commitment to a comprehensive mid-term evaluation will the government, industry and stakeholders have certainty that the goals established for MYs 2022-2025 remain appropriate and feasible. [EPA-HQ-OAR-2010-0799-9471-A1, pp.4-5]

Nissan will continue to provide a full range of vehicles, and to incorporate continuous improvements throughout its vehicle fleets. This includes advances in internal combustion engines (ICEs) as well as the continued deployment of electric drivetrains. Nissan also continues to explore appropriate opportunities for mass reduction. A comprehensive mid-term evaluation is critical to determining the extent to which the market accepts the additional costs associated with more advanced internal combustion vehicles, as well as the extent to which the advanced powertrain market develops. In addition, government regulatory programs involving both fuels and safety requirements will directly affect future feasibility and must be considered in any future review. [EPA-HQ-OAR-2010-0799-9471-A1, p.5]

Without a robust mid-term evaluation, manufacturers may face standards that have become infeasible in light of market movements or economic conditions beyond their control. Investment decisions will be focused on short term compliance rather than longer term technology advancements. The absence of a mid-term evaluation would subvert the framework embedded into the National Program and would create the uncertainty the agencies are trying to overcome

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by providing a starting point for regulatory review covering model years into the future. [EPA-HQ-OAR-2010-0799-9471-A1, p.5]

A comprehensive mid-term review is also necessary to review the extent to which the industry is able to meet the aggressive light truck standards set forth for MYs 2022-2025. Nissan anticipates that the level of improvement established for that vehicle segment will be extremely challenging, particularly for companies selling more limited volumes in those market segments or if companies curtail their offerings in the light truck fleet. The costs associated with the technologies necessary to meet the standards while still providing requisite consumer utility may render the light truck standards established for the later model years infeasible and require adjustment. [EPA-HQ-OAR-2010-0799-9471-A1, p.5]

Nor is it feasible to rely on credits generated in the car fleet to cover deficits in the truck fleet. While the GHG program properly allows for full credit transfers between the car and truck fleet, the ability to generate credits in the car fleet to cover the more challenging requirements in the truck fleet are statutorily limited in the CAFE program. It is imperative for the agencies to engage in a meaningful mid-term evaluation to ensure that the standards remain feasible for companies servicing this market with smaller volume light truck fleets. [EPA-HQ-OAR-2010-0799-9471-A1, pp. 8-9]

Both the Clean Air Act and the Energy Policy & Conservation Act require that the agencies make a determination that the standards can be met through cost-effective technologies. While NHTSA, subject to the five year limitation, will not yet formally adopt final regulations, consistent with the National Program the standards formally established by EPA will effectively be adopted later and applied to the CAFE program as well. A robust mid-term review is necessary to ensure that the standards remain consistent with the statutory underpinnings of both programs. [EPA-HQ-OAR-2010-0799-9471-A1, p. 9]

Accordingly, a robust and comprehensive mid-term review is legally necessary to ensure that the standards for the later model years are supported by substantial evidence and are not arbitrary and capricious. See *Motor Vehicle Mfr's Ass'n v. State Farm*, 463 U.S. 29, 42 (1983) (listing examples of arbitrary and capricious agency activity); *Association of Data Processing Services Organization v. Board of Governors of the Federal Reserve System* 745 F.2d 677, 683-84 (D.C. Cir. 1984). [EPA-HQ-OAR-2010-0799-9471-A1, p. 9]

Section 202(a)(2) of the CAA requires that standards promulgated under the Act 'shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.' 42 U.S.C. § 7521(a). Similarly, EPCA requires that CAFE standards be established at the 'maximum feasible' level taking into account, among other things, 'technological feasibility' and 'economic practicability.' 49 U.S.C. § 32902(f). [EPA-HQ-OAR-2010-0799-9471-A1, p.9]

The proposed standards assume a significant amount of market transformation, both within the ICE fleet and with regard to the penetration of new powertrains in order to be able to meet the levels established for the later model years. Unlike the situation in which the agencies establish

aggressive requirements with long-lead times to allow technology and market development, the standards for MYs 2022-2025 follow a decade of increasingly stringent requirements already demanding substantial technological deployment and market penetration. This layering of new requirements renders it virtually impossible for the agencies to be able to determine with the requisite level of regulatory certainty that cost-effective, economically-practicable technology can be deployed into the fleet and enable compliance with these standards. [EPA-HQ-OAR-2010-0799-9471-A1, p.9]

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 127-128.]

Nissan's commitment to the proposed rule is premised on a robust and comprehensive mid-term evaluation for the model years 2022 to 2025. The standards are extremely aggressive and extend beyond current development planning periods. The agencies have assumed a significant amount of technology advancement, consumer acceptance, and fleet shift during these model years covered.

The ability of auto manufacturers to meet these standards will depend not only on our commitment to incorporate additional and transformational technologies but also on factors external to vehicle design and engineering. The mid-term evaluation is essential to ensuring that the standards remain technologically and economically feasible during those time periods.

Organization: Northeast States for Coordinated Air Use Management (NESCAUM)

EPA should continue to evaluate the GHG effects of these technology incentives to ensure preservation of the overall goals of the program. We also expect that EPA will monitor upstream emissions from the power grid to ascertain whether the improvements assumed to occur do in fact occur. In that regard, we strongly support the proposed mid-term review that will provide the opportunity to consider appropriate revisions to these incentives and to other aspects of the program. [This comment can also be found in section 4 of this comment summary.] [EPA-HQ-OAR-2010-0799-9476-A1, p. 2]

[These comments were also submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 74.]

Organization: Pew Charitable Trusts

While the proposed requirements set forth by EPA and DOT are aggressive and laudable, Pew strongly urges the agencies not to allow the final standards to be weakened during the midterm review period. Pew understands that fuel efficiency standards produced by DOT are limited by statute to five year increments, and also appreciates the value of technological and cost review to ensure that standards are achievable. However, we believe that federal fuel efficiency standards must remain strong in order to enhance American manufacturing competitiveness in the auto industry while protecting consumers and businesses from fuel cost volatility. [EPA-HQ-OAR-2010-0799-9496-A2, p. 2]

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Organization: Porsche Cars North America, Inc. (PCNA)

Mid-term Evaluation [EPA-HQ-OAR-2010-0799-9264-A1, p. 4]

Porsche strongly supports the proposed mid-term evaluation which will allow the Agencies to determine whether adjustment of fuel economy and GHG standards is warranted. The success of the program depends on customer acceptance, developments in technology, costs, safety, fuels, necessary infrastructure, and other relevant factors. Assumptions that informed the program model include significant uncertainties due to the length of time over which the standards apply. It is critical to evaluate whether those assumptions are still valid, and therefore whether the standards remain appropriate in light of technological and other changes that may have occurred since the initial setting of the standards. [EPA-HQ-OAR-2010-0799-9264-A1, p. 5]

In making this comment, we wish to stress that Porsche does not assume that EPA or NHTSA intend to deviate from the mid-term evaluation process or ignore its deadlines. We believe that all parties, including the Agencies, will work in good faith to follow the process, and will perform a serious assessment of the state of the program. But we wish to stress that the success of the mid-term evaluation depends on strict adherence to commitments and deadlines. Such adherence is essential in order to mitigate a significant potential for disputes and difficulties in the future. [EPA-HQ-OAR-2010-0799-9264-A1, p. 5]

Organization: RVIA

Therefore, we support the proposed mid-term review and we recommend that the agencies use the time leading up to the mid-term review to talk to consumers to better gauge what impact the increased costs will have on their new vehicle purchase decisions if prices are increased by the amounts projected by EPA and NHTSA. [EPA-HQ-OAR-2010-0799-9550-A2, p.2]

With regard to full size pickups, EPA and NHTSA should utilize the time leading up to the mid-term review to talk to consumers to better gauge what impact the increased costs will have on their new vehicle purchase decisions if prices are increased by the amounts projected by EPA and NHTSA for the 2022-2025 model year timeframe. [EPA-HQ-OAR-2010-0799-9550-A2, p.4]

Organization: Securing America's Future Energy (SAFE)

Midstream Review: The agencies have proposed standards that extend relatively far into the future. In contrast to the last round of regulations issued in 2011 that will affect cars that will enter the market within five years, these regulations will affect some cars that will not be manufactured for thirteen years. (Thirteen years ago, traditional hybrids were not yet on the market in the United States.) [EPA-HQ-OAR-2010-0799-9518-A1, p. 11]

The thirteen years over which these regulations will remain in effect will be a period of great uncertainty with respect to at least two factors that will have a substantial effect on the cost-effectiveness of more efficient vehicles, particularly if traditional hybrids, PHEVs or EVs are

needed to meet the new standards: battery prices and oil prices. [EPA-HQ-OAR-2010-0799-9518-A1, p. 11]

It appears likely that automakers will have to rely on traditional hybrids, and to a lesser degree PHEVs and EVs, in order to meet the new standards. Throughout the period over which the standards will be tightening, the cost of these vehicles, and their overall cost-effectiveness, will remain a function of the price of large-format automotive grade batteries. In an area of such rapidly evolving technology, however, it is difficult to forecast with any degree of certainty what battery prices might look like in 2020, not to mention 2025. Higher battery prices will make it harder to meet the standards, just as lower battery prices will make it easier, perhaps supporting even tighter standards. [EPA-HQ-OAR-2010-0799-9518-A1, p. 11]

While battery prices are difficult to predict eight to thirteen years into the future, oil prices are difficult to predict even months in the future. As we prepare these comments, oil is selling for about \$100 per barrel. But prices have been as high as \$114 and as low as \$34 over the past 36 months, and as low as \$11.37 and as high as \$145 over the past 13 years. Stated simply, given the uncertainty over oil prices of the time during which these rules will be in effect, and the consequences of oil prices for the cost-effectiveness of these rules, it is incumbent on the regulating agencies to carefully reevaluate the cost effectiveness of the standards in light of current oil prices and trends, and tighten or loosen the standards as appropriate at the midstream review. [EPA-HQ-OAR-2010-0799-9518-A1, p. 11]

Of equal importance is the possibility that technological innovation over the next several years will substantially alter the cost-effectiveness of increasing fuel efficiency or reducing oil consumption. For instance, the 2002 National Academies of Science study on fuel economy did not even mention plug-in hybrid technology, despite a detailed discussion of traditional hybrid technology, yet plug-in hybrids were on the road just eight years later. One can imagine that a newly developed battery chemistry, for instance, might substantially alter the cost-effectiveness of the regulations, allowing for an adjustment of the standards. [EPA-HQ-OAR-2010-0799-9518-A1, pp. 11-12]

Not only do these regulations extend far into the future, and not only is there substantial uncertainty with respect to their cost-effectiveness, the regulations would require percentage increases in fuel economy that exceed previous increases, and may be more difficult to achieve as the lowest cost improvements in efficiency have already been made. We appreciate that the accelerated adoption of new technology may allow automakers to meet the proposed standards without any interruption in their product cycles, while delivering vehicles that consumers will purchase and enjoy. However, we also recognize that this question is fundamentally one of consumer acceptance that can be answered only once new more efficient vehicles are put into automobile retailers' showrooms. A midstream review will enable the agencies to examine the consumers' acceptance of new vehicles and adjust the standards upwards or downwards if and as appropriate. [EPA-HQ-OAR-2010-0799-9518-A1, p. 12]

Given the substantial uncertainty regarding the cost of batteries and oil, SAFE believes, that the midstream review should be a comprehensive review into which the agencies enter with an open

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mind. In support of that process, the agencies should prepare a new or updated technical support document and regulatory impact analysis. It should then affirm or adjust (upwards or downwards as appropriate) the standards based on the results of the analyses. [EPA-HQ-OAR-2010-0799-9518-A1, p. 12]

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 152.]

Finally, I can't stress enough, as others have already said, the importance of a real midstream review. The fuel economy regulations have never been issued so far in advance and asked so much of automakers. We don't know where oil prices are going to be. We don't know where battery prices are going to be. And these are critical factors in trying to see what can happen. And just like it's possible that the rules may not prove cost-effective, it's possible that we may find that tightening is also inappropriate. So we stress the importance of having a real review.

Organization: Sierra Club, Environment America, Safe Climate Campaign, and Clean Air Council

Remain strong throughout the program and not end with the midterm review and a backstop should be considered: Our transportation system drives our addiction to oil with cars and light trucks alone consuming more than 8 million barrels of oil every day. This addiction to oil spews out nearly 20% of US climate disrupting pollution. The proposed standards for 2017-2025 vehicles can help Americans avoid using as much as 1.5 million barrels of oil every day in 2030 and cut carbon emissions in that year by 280 million metric tons. A consumer who buys an average new vehicle in 2025 would keep more than \$4,000 in their pocket rather than spending it on oil – even after paying for fuel savings technologies. [EPA-HQ-OAR-2010-0799-9549-A2, p. 4]

But to deliver these benefits the program must remain strong through 2025. The program as proposed includes a mid-term review that begins in 2017. While EPA's authority under the Clean Air Act permits it to propose and finalize a program for the full nine model years, NHTSA's authority is constrained. This factor among others created pressure for the mid-term review which appropriately will involve all three standard setting agencies: EPA, NHTSA and CARB. [EPA-HQ-OAR-2010-0799-9549-A2, pp. 4-5]

Automakers have suggested additional reviews in testimony at the public hearings the agencies held in January. We strongly urge that the final rule not open up additional reviews of the standards. As it stands, the mid-term review will occur just as this rule is taking affect and would therefore be based up on the successful implementation of the 2012-16 program. The agencies should ensure transparency and access to data that will allow the public to effectively and timely monitor compliance, trends and technology application. [EPA-HQ-OAR-2010-0799-9549-A2, p. 5]

In particular, the agencies should provide the public with data, including the following:

Credit use, current balance, and method of credit generation by manufacturer,

Technology penetration, both overall and by manufacturer

Sales by vehicle footprint

Car/truck mix, both overall and by manufacturer [EPA-HQ-OAR-2010-0799-9549-A2, p. 5]

We appreciate that the proposed rule as structured offers the opportunity for a full assessment of progress and technology development but it is necessary for mid-term review to be a check on progress and an opportunity to strengthen standards and not become an off-ramp or stop sign. [EPA-HQ-OAR-2010-0799-9549-A2, p. 5]

Organization: Toyota Motor North America

Also groundbreaking is the scope of the proposed regulations, covering cars and trucks the industry will be designing, manufacturing and selling up to 13 years in the future. The agencies have made a variety of assumptions underlying the proposed standards that may or may not prove accurate. These assumptions include the efficacy and pace of cost reduction for certain technologies, as well as consumers' willingness to pay for them. For this reason, Toyota fully supports timely completion of the proposed mid-term review to assess our progress toward these goals. [EPA-HQ-OAR-2010-0799-9586-A1, p.2]

Mid-Term Review [EPA-HQ-OAR-2010-0799-9586-A1, p.7]

In proposing standards through 2025 model year, the agencies have made assumptions about numerous key factors including technology cost, technology performance, fuel prices, manufacturing efficiency, consumer adoption, and other factors that represent their best estimates of the future based on information available in 2012. The agencies acknowledge the significant uncertainty in many of these assumptions, and have proposed a mid-term evaluation of the 2022-2025 model year standards to determine whether those standards remain appropriate in light of changes that may have occurred since the time of proposal.¹ Toyota supports the mid-term review but, as discussed below, we request clarifications and additional details as to how the review will be administered. [EPA-HQ-OAR-2010-0799-9586-A1, p.7]

Key Factors/Assumptions [EPA-HQ-OAR-2010-0799-9586-A1, p.7]

The agencies proposed eight high-level areas of examination for the mid-term review and the preamble discusses additional factors to be evaluated. The Alliance of Automobile Manufacturers (Alliance) has submitted comments addressing the proposal, including a recommendation to expand the factors that should be included in the mid-term review. Toyota supports the Alliance comments in this area. Beyond the Alliance comments, the agencies should consider two additional issues in the mid-term review. [EPA-HQ-OAR-2010-0799-9586-A1, p.7]

First, the agencies must ensure that the proper baseline is used when determining the feasibility of the 2022-2025 model year standards. This issue is best explained with a simple example.

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Suppose the industry 'compliance level' at the time of the mid-term review (~2018 model year) is 38 mpg in CAFE space and the agencies determine that cost-effective technology exists to support a 4 percent annual improvement rate. A logical conclusion would be that 50 mpg (in CAFE space) is an appropriate standard for 2025 model year (a 4 percent annual compounded increase applied to 38 mpg for seven years). However, if industry has relied on credits to achieve the 38 mpg level, a 50 mpg target would effectively be higher than a 4 percent annual increase. In fact, if the industry relied on credits for just 2 mpg of compliance (resulting in a true technology baseline of 36 mpg), the annual improvement rate would be nearly 5 percent per year - or 25 percent higher than using the 38 mpg baseline. NHTSA is precluded by law from considering the availability of credits in establishing maximum feasible CAFE standards. Under current law, NHTSA will also be precluded from considering the availability of credits when it establishes 2022-2025 model year standards based on the mid-term review. While the CAA does not appear to specifically limit EPA's authority in this regard, the shared goal of harmonization would dictate EPA similarly not consider the availability of credits when determining the appropriateness of the 2022-2025 model year standards during the mid-term review. [EPA-HQ-OAR-2010-0799-9586-A1, p.7]

Second, in the course of the mid-term review the agencies should continue EPA's longstanding practice of treating vehicles and fuels as a system. While the proposed standards are based on currently available fuels, higher octane and/or reduced sulfur can enable additional greenhouse reductions and fuel economy improvements from several technologies. For example~ lower sulfur gasoline would allow the use of stratified lean-burn engines. Increasing octane in gasoline would enable engines to operate at higher compression ratios, and support technology approaches such as heavily boosted, downsized engines. Manufacturers may find these options increasingly necessary in the 2022 - 2025 model year time frame, and for that reason the role of fuels and fuel specifications should be included as part of the mid-term review. [EPA-HQ-OAR-2010-0799-9586-A1, p.8]

Process Details and Schedule [EPA-HQ-OAR-2010-0799-9586-A1, p.8]

The proposed regulation requires a Draft Technical Assessment Report to be completed by November 2017, and a final determination as to whether the 2022-2025 standards remain appropriate to be peer-reviewed and made available for public comment by April 1, 2018. If the EPA determines the standards are not appropriate as promulgated in this rulemaking, EPA stated its intention in the preamble to establish by rulemaking new standards that are appropriate under section 202(a) of the CAA. In any case, NHTSA must formally promulgate standards for 2022-2025 model years by April 1, 2020. [EPA-HQ-OAR-2010-0799-9586-A1, p.8]

Toyota understands that soon after promulgating the 2017-2025 model year standards in this rulemaking, the agencies intend to begin an ongoing dialogue with the auto manufacturers, suppliers~ and other stakeholders about progress toward meeting the joint national standards. Toyota supports this type of information sharing because it will provide the agencies the most accurate sense of technology advancements, consumer preferences, and economic conditions as circumstances evolve. The information derived from this dialogue can serve as building blocks toward the mid-term review and afford the agencies and auto manufacturers timely course adjustments for items within their control. Toyota believes it would be helpful for the agencies to

outline this process in as much detail as possible in the preamble to final rule. [EPA-HQ-OAR-2010-0799-9586-A1, p.8]

2022-2025 Model Year Default Standards [EPA-HQ-OAR-2010-0799-9586-A1, p.8]

Toyota appreciates the agencies' commitment to a mid-term review and EPA's stated intention to finalize any changes in its 2022-2025 model year GHG standards at least 18 months prior to the beginning of the 2022 model year ² (e.g. by April 1, 2020). Notwithstanding the good intentions of all parties involved to support timely completion of the mid-term review and timely rulemaking as needed, Toyota is concerned about what happens if the agency does not take a final agency action by April 1, 2020 to either validate the standards as originally promulgated or to revise the standards. As proposed by EPA, the 2022-2025 model year GHG standards would remain in effect unless and until EPA changes them by rulemaking. [EPA-HQ-OAR-2010-0799-9586-A1, p.8]

However, if EPA misses its self-imposed deadline for final agency action, it will not have met the requirement of Section 202(a)(2) of the CAA to provide adequate lead time for development of requisite technology for meeting emission standards. Further, given that EPA and NHTSA plan to work collaboratively on the mid-term review (with ARB) and to utilize the results to jointly assess the 2022-2025 model year standards, failure by EPA to take final agency action would likely indicate that NHTSA lacks sufficient information to promulgate its standards for 2022-2025 model year in a timely manner. In such a case, there would be no new NHTSA standards for 2022 model year, and NHTSA would presumably be forced to adopt the 2021 model year standards for 2022 model year. It is unclear what standards ARB would pursue for 2022 model year in this case. This would result in major differences between the EPA and NHTSA standards, and potentially different standards for ARB and Section 177 states, and would run completely contrary to the objective of a harmonized national program. [EPA-HQ-OAR-2010-0799-9586-A1, p.9]

For the reasons described above, Toyota requests that, in the event EPA does not take final agency action concerning the 2022-2025 model year standards by April 1, 2020, the 2021 model year GHG standards remain as the 'default' standards until such time as EPA does take final agency action providing at least 18-months of lead time prior to the applicable model year. [EPA-HQ-OAR-2010-0799-9586-A1, p.9]

California Air Resources Board Participation [EPA-HQ-OAR-2010-0799-9586-A1, p.9]

Toyota fully agrees that ARB, as a signatory to the national program for GHG emissions and fuel economy standards, will be an important partner in the mid-term review process. We support the agencies' intention to coordinate the mid-term review with ARB and condition a waiver for their 2017-2025 model year standards on ARB accepting any adjustment to the EPA 2022-2025 model year GHG standards that result from the midterm review. [EPA-HQ-OAR-2010-0799-9586-A1, p.9]

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1 - NHTSA's statutory authority prevents it from formally promulgating standards beyond 5-model years. Toyota's comments on the mid-term review generally refer the 'review' of the proposed EPA GHG standards, and to NHTSA's participation in, and use of, the mid-term review results as a basis for formally establishing for 2022-2025 model year CAFE standards. [EPA-HQ-OAR-2010-0799-9586-A1, p.7]

2 - NHTSA is required by law to finalize CAFE standards at least 18-months prior to the start of the model year. [EPA-HQ-OAR-2010-0799-9586-A1, p.8]

Organization: U.S. Chamber of Commerce

The Chamber supports reducing emissions from automobile tailpipes, and supports greater vehicle fuel economy when needed to address consumer demand. The Chamber is pleased that the automobile industry is receiving the regulatory certainty it needs for long-term planning purposes. However, given the costs the regulations will require to be built into all new vehicles to achieve these goals, a strong 2018 midterm review will be essential. [EPA-HQ-OAR-2010-0799-9521-A1, p. 1]

I. The 2018 Mid-Year Review Must Be Strong, Thorough and Realistic

The National Program for fuel economy proposed by EPA and NHTSA is very aggressive, and will test the limits of the automobile industry's technological prowess. This is particularly evident in the last four years of the program (2021-2025), when the rate of increase in light truck fuel economy standards increases dramatically, from 3.5 percent per year to 5 percent per year. This portion of the proposal reaches so far into the future that EPA, NHTSA and automakers truly have no certainty as to how technologies will develop and what they will cost. However, at this early juncture, EPA seems to admit that they will cost the bulk of consumers more money. [EPA-HQ-OAR-2010-0799-9521-A1, p. 2]

EPA states that the new rules will save consumers money under three scenarios: (1) the vehicle is driven by one owner for its entire life span; (2) the customer pays cash and keeps the vehicle for at least four years; or (3) the customer finances the car with a five-year loan and keeps the car for at least those five years. EPA appears to imply that anyone in a typical two-, three- or four-year lease will pay more for their vehicle as a result of the new fuel economy standards. EPA also appears to imply that anyone purchasing a vehicle with a loan that lasts less than five years will pay more for their vehicle as a result of the new fuel economy standards. [EPA-HQ-OAR-2010-0799-9521-A1, p. 2]

A large swath of the car buying public—i.e. anyone owning or leasing a new car for less than four years—will therefore be exposed to higher vehicle costs as a result of the proposed rule. Given that the driving force for this rule is fuel economy, if consumers are unwilling or unable to pay the added cost for this benefit, EPA and NHTSA must be prepared to make changes to the program. [EPA-HQ-OAR-2010-0799-9521-A1, p. 2]

Fuel economy matters to consumers, but car buyers historically have not valued fuel economy as highly as other key attributes such as affordability, safety, convenience and utility. A car buyer's

perspective on fuel economy also fluctuates with fuel prices, which are very difficult to predict long-term. There is therefore a very real possibility that, for one or more reasons, consumers will not want to buy some of the new fuel-efficient vehicles that will have to be brought to market to comply with the 2017-25 rule. [EPA-HQ-OAR-2010-0799-9521-A1, p. 2]

Moreover, conditions beyond the control of automobile manufacturers will greatly affect automakers' ability to achieve aggressive new fuel economy standards. Gasoline prices are virtually impossible to predict long-term. Availability of critical minerals has already become an important issue to the automobile industry. The state of the economy certainly has an impact on consumers' car buying habits. And infrastructure for many of the new technologies being incentivized by the 2025 standards—such as electric vehicles, fuel cells and alternative fuels—must actually be built. [EPA-HQ-OAR-2010-0799-9521-A1, pp. 2-3]

It is therefore of utmost importance that any final rule include a rigorous midterm review in 2018, with a clearly defined process for conducting the review. If mainstream consumers are not buying the newer, fuel-efficient vehicles or are not likely to buy the significantly more efficient (and expensive) vehicles slated for the 2021-25 time frame, then the agencies must be able to change the rule.² If conditions change that are outside the control of the automobile industry, Federal regulators must be willing and able to take a pragmatic view of the 2021-2025 time frame and revise the rule accordingly. [EPA-HQ-OAR-2010-0799-9521-A1, p. 3]

² And if the agencies wish to change the rule downward, they should not be bound to the will of California, which has shown time and again that its fuel economy goals do not represent the national interest.

Organization: Union of Concerned Scientists (UCS)

(d) Mid-Term Evaluation

A great deal of attention to this proposal has been focused on the mid-term evaluation provision, and with good reason. Structured properly, it can provide assurance that the nine-year rulemaking is both equitable and based on the latest research. Structured improperly, however, it can create regulatory uncertainty, disturb the industry's product planning efforts, and impede technological development by undercutting industry investments in technologies slated to serve the post-MY2021 vehicle fleet. [EPA-HQ-OAR-2010-0799-9567-A2, p. 10]

According to UCS analysis, nearly 40 percent of the MY2017-2025 Program's 2030 oil savings and emissions reductions benefits would be lost if the mid-term evaluation foreclosed subsequent improvements to vehicle efficiency and GHG emissions reductions post-MY2021. Given what is at stake, it is imperative that the agencies structure the mid-term evaluation to ensure that the provision is used to support stronger standards moving forward, and not as an opportunity by the industry to stall or forego regulatory obligations. [EPA-HQ-OAR-2010-0799-9567-A2, p. 10]

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[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 218.]

For example, the proposal's midterm evaluation provision must be structured to ensure that it is used to support strong standards moving forward, and not merely as an opportunity by the industry to stall or forego regulatory obligations.

Automobile manufacturers have publicly stressed the importance of tracking progress leading up to the mid-term evaluation. As UCS has stated in the past, the mid-term evaluation should occur only one time, and it should be conducted as closely to the first year in question (MY2022) as legally permitted, to most accurately capture the status of technology and the vehicle market for the model years in review. While EPA and NHTSA should remain up to date on technology developments, regularly scheduled “progress reports” between now and 2018, as suggested by some in industry, would be both time consuming and too premature to judge technology readiness of the Model Year 2022-2025 standards. Premature reports would increase speculation within the industry about “prevailing winds” of the mid-term evaluation, create unnecessary uncertainty, and undermine the intent and effectiveness of the provision itself.

That being said, UCS strongly supports the agencies continuing their work – for instance, the impressive teardown cost analysis conducted by EPA, and other assessments documented in the Joint Technical Support Document – during the next five years in order to feed those analyses into the formal mid-term evaluation. [EPA-HQ-OAR-2010-0799-9567-A2, p. 10]

When the mid-term evaluation is conducted to assess possible modification (up or down) of the 2022-2025 standards, it is critical that the entire suite of factors affecting manufacturers’ ability to comply be considered in their totality. UCS agrees that “a holistic assessment of all of the factors...without placing decisive weight on any particular factor or projection” is the correct approach in conducting the mid-term evaluation. Basing latter year feasibility on an isolated set of factors would be turning a blind eye to the reality that the industry has multiple options at its disposal in meeting the standards. [EPA-HQ-OAR-2010-0799-9567-A2, p. 10]

Finally, UCS agrees with the agencies that the mid-term evaluation be a closely coordinated process, conducted jointly by EPA, NHTSA, and CARB; that the evaluation be open to public participation; and that the agencies seek, consider and respond to public comment on its determination prior to invoking any final actions. [EPA-HQ-OAR-2010-0799-9567-A2, p. 10]

Though I strongly support these standards, I am concerned about possible loopholes that automakers could exploit. Specifically: The agencies are proposing a 'mid-term' review that would begin soon after the standards come into effect. In the past, automakers have abused similar programs-turning them into off-ramps as opposed to reviews. It is critical that this review does not undermine the program through 2025. [EPA-HQ-OAR-2010-0799-9713-A2, p. 2]

Organization: United Automobile Workers (UAW)

Finally, the UAW is pleased that EPA is proposing a mid-term review for the proposed standards for model years 2022–2025, and that NHTSA will perform a full rule making procedure for those years as required under its statutory authority to regulate fuel economy. Given the quickening pace of technical innovation and cost reductions in the auto industry, the UAW believes that it is wise to continue to evaluate the cost and effectiveness of fuel-saving technologies well in advance of the formal mid-term review. [EPA-HQ-OAR-2010-0799-9563-A2, p.4]

The mid-term review is a critical structural feature of the proposed unified national program, and a central reason the UAW can be so strongly supportive of the proposals by EPA and NHTSA. The UAW believes that the mid-term review should be conducted with the same type of broad stakeholder engagement and public participation that occurred in the development and presentation of the proposed regulations for 2017–2025. The proposed standards are stronger and more achievable because of this process, and they stand as a testament to how we can work together to address real issues of national importance. [EPA-HQ-OAR-2010-0799-9563-A2, p.4]

Organization: United States Senate

In addition, the 'mid-term' review for the model year 2022-2025 standards will require your agencies to evaluate whether the stringency required in the second phase of the program is still appropriate or whether the standards should be revised upwards or downwards. [NHTSA-2010-0131-0264-A1, p.1]

Organization: University of Michigan

A Call to EPA and NHTSA to Consider the Consumer Fuel Usage Reduction Options in the Mid-term Evaluation of the Greenhouse-Gas Emission and Corporate Average Fuel Economy Standards for Light-Duty Vehicles. [EPA-HQ-OAR-2010-0799-7986-A1, p. 1] [This comment can also be found in section 12 of this comment summary.]

As both the EPA and NHTSA will be undertaking the midterm evaluation of the GHG emission and the corporate average fuel economy standard for model year 2022-2025 vehicles in due course, we recommend that meaningful incentives for consumer fuel usage reduction be taken into consideration. [EPA-HQ-OAR-2010-0799-7986-A1, p. 2] [This comment can also be found in section 11 of Docket number EPA-HQ-OAR-2010-0799-7986-A1]

Organization: Volvo Car Corporation (VCC)

VCC is sympathetic to the numerous environmental challenges that impact the agencies in trying to reach their varied goals. However, it is of utmost importance that all agencies, as far as possible, collaborate to achieve common understandings, wherever possible. [EPA-HQ-OAR-2010-0799-9551-A2, p. 3]

VCC supports a mid-term evaluation. Amid-term evaluation will allow manufacturers and the agencies to consider whether the regulation is reasonable and on track in its assumptions. VCC supports a mid-term evaluation because it is very difficult to predict fifteen years into the future

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without making a vast number of assumptions. Customer acceptance, affordability (especially in light of the phase-out of many of the federal and state incentives), safety, convenience and utility should be examined in the mid-term evaluation. [EPA-HQ-OAR-2010-0799-9551-A2, p. 3]

It is therefore imperative that the industry and the agencies review and consider the outcomes of our work in 2012 in relation to the joint plan at the midpoint of the regulated period. With regard to the midterm evaluation, VCC emphasizes the needs and clarifications outlined in the Alliance comments. [EPA-HQ-OAR-2010-0799-9551-A2, p. 3]

For VCC, as an intermediate manufacturer, the common understanding and harmonization of approaches of the agencies is of great importance, and ultimately leads to a very high level of administrative efficiency. It is critical for smaller manufacturers to reduce administrative costs in order to be able to focus on the relevant issues such as developing environmentally advanced technology. [EPA-HQ-OAR-2010-0799-9551-A2, p. 3]

The following criteria should be considered for the Mid-Term Evaluation:

- Are the costs of Advanced Technology Vehicles declining as predicted in the assessment in the NPRM?
- What impact will the new requirements have on sales of passenger cars and light duty trucks?
- How will the new rules impact vehicle safety?
- Is the needed fueling infrastructure available to enable PHEVs, BEVs and fuel cell vehicles to penetrate the market at the levels predicted?
- Are consumers purchasing the technologies needed to achieve the goals of the rulemaking?
- Multipliers for the period 2020-2025 need to be evaluated and reevaluated
- Off cycle technology - additional innovations identified between 2012 and 2018
- Harmonization between all agencies both regarding technology demands and administration - EPA, NHTSA and CARB [EPA-HQ-OAR-2010-0799-9551-A2, p. 3]

Organization: Weiner, L.

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, p. 107.]

So we ask that the midterm review be vigilant, and there should not be an opportunity to delay full compliance or, as has occurred occasionally in history, to dismiss part of the program. But we look at the mid-reviews to strengthen the compliance.

Response:

2.5. Test Procedures

Organizations Included in this Section

AAA
American Lung Association of the Mid-Atlantic
Ferrari
Ford Motor Company
Johnson Controls, Inc.
Manufacturers of Emission Controls Association (MECA)
Marz, Loren C.
Massachusetts Institute of Technology (MIT)
Motor & Equipment Manufacturers Association (MEMA)
National Automobile Dealers Association (NADA)
Necheles, L.
Securing America's Future Energy (SAFE)
Sierra Club, Environment America, Safe Climate Campaign, and Clean Air Council
Smith, Frank Houston
Tarazevich, Yegor
U.S. Coalition for Advanced Diesel Cars
Volvo Car Corporation (VCC)
Weiner, L.

Organization: AAA

While it is clear that substantial progress is being made to improve the program, AAA continues to have concerns with the real world accuracy of the testing procedures utilized to determine the mileage ratings under CAFE. [EPA-HQ-OAR-2010-0799-9484-A1, p. 1]

With this said, AAA continues to have concerns with the testing procedures used to determine miles per gallon (mpg) ratings under the CAFE program. AAA maintains that there are existing tests that can be used to produce more accurate fuel economy ratings. CAFE ratings in particular continue to be based on testing methodology from the 1970s, even though it has been acknowledged to be inaccurate. [EPA-HQ-OAR-2010-0799-9484-A1, p. 1]

In 2008, EPA adopted new testing procedures with input from the Automobile Club of Southern California's Automotive Research Center. These procedures combined the results of three new dynamometer tests to provide a more accurate method of estimating mpg and showed these new ratings to be at least 30 percent lower than the unadjusted test results. In 2011, AAA worked closely with EPA and NHTSA to develop new vehicle labels that provide consumers with the clear and accurate information regarding safety, fuel economy, and GHG emission scores necessary to facilitate informed vehicle purchase decisions. [EPA-HQ-OAR-2010-0799-9484-A1, p. 2]

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Unfortunately, CAFE numbers do not reflect these new testing procedures. Until testing procedures are harmonized, the discrepancy between the two ratings will only increase. AAA is interested in working with EPA and NHTSA to find a solution that provides the most accurate consumer information possible. [EPA-HQ-OAR-2010-0799-9484-A1, p. 2]

AAA commends NHTSA and EPA for working diligently with auto manufacturers and other stakeholders to reach an agreement on the proposed new standards. Having safe, energy-efficient vehicles is in everyone's best interest, but it is equally vital to ensure that the testing used to gauge efficiency provides accurate results. Thank you for your consideration of AAA's views. [EPA-HQ-OAR-2010-0799-9484-A1, p. 2]

Organization: American Lung Association of the Mid-Atlantic

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 82.]

We also support changes to testing procedures and calculations that properly reflect actual experience.

Organization: Ferrari

2) Test procedures [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

We believe appropriate to continue to measure CO₂ emissions and fuel economy using the traditional test cycles city (FTP) and highway (HFET) for the present proposal. It is reasonable for EPA to address different test procedures in the context of a future rulemaking. Enough lead-time should be given in case of any change in the test procedure for manufacturers to make necessary changes to test equipments, carry out tests, and reflect the new procedures in their compliance plans. [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

We also support the proposal that the 5-cycle test procedures would remain the starting point for demonstrating off-cycle emissions reductions. [EPA-HQ-OAR-2010-0799-9535-A2, p.11]

Organization: Ford Motor Company

[These comments were submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, p. 46.]

In general, we continue to encourage the agencies to take a holistic view of the transportation sector to encourage the implementation of technologies and strategies whose benefits might otherwise be reflected in the formal fuel economy test procedures.

[These comments were submitted as testimony at the Philadelphia, Pennsylvania public hearing on January 19, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11788, p. 35.]

With respect to our elements of the proposal, we will continue to work with the agencies to develop the test procedures necessary to validate off-cycle technology.

Organization: Johnson Controls, Inc.

Test cycles must be more reflective of the real-world. Johnson Controls is concerned that the proposed standards do not address one of the core problems with the standards - outdated city/highway drive cycle averages. Johnson Controls recognizes that the drive cycles must be a compromise between real world driving and testing workload/complexity. That said, the driving patterns and behaviors of American consumers have shifted dramatically in the past 40 years since the city/highway drive cycles were developed. The mere fact that the fuel economy labeling process for new vehicles has been adjusted twice since its inception is evidence that customer driving patterns are no longer properly reflected in the city/highway driving cycles. EPA's MOVES model includes an estimate that 13.5% of all driving (in terms of vehicle hours operating) nationwide is at idle. This is 50% more idling than the time weighted average idling time in the combined city/highway driving cycles of 9%. The Joint Technical Support Document (JTSD) issued with this NPRM offers giving 75% of theoretical difference in fuel economy benefit between MOVES and the city/highway drive cycles for start-stop technology as an off-cycle fuel economy and CO₂ credit. The rationale stated in the JTSD only offers 75% of the theoretical difference is due to engine warm-up characteristics and that start-stop functionality is disabled during that phase of the drive cycle. Johnson Controls believes this is a good start towards recognizing the benefit of start-stop technology. However, by placing a limit on the off-cycle credits that can be given to start-stop technology, the regulation may unintentionally place a limit on the level of innovation that could be employed to improve fuel economy, reduce the country's dependence on foreign oil, and reduce greenhouse gas emissions. While not directly involved in the business or technology of improving the warm-up characteristics of the engine, we do believe that innovations will continue to improve start-stop operation, consistency, and predictability. Customers recognize the tangible fuel savings benefits of start-stop technology since they can readily recognize the engine is not running and, therefore, not consuming fuel. This customer feedback to the OEMs will naturally drive technology and innovation to ensure that start-stop functionality is available under more operating conditions - including wider ambient temperature and wider engine operating temperature. Johnson Controls recommends offering more flexibility to the OEMs for off-cycle credits for start-stop technology if they can provide evidence of the operational characteristics of the technology performing better than 75% of the theoretical benefits. Johnson Controls also recommends the drive cycles be revisited and new drive cycles be developed which reflect the driving styles of today's driver. To reduce workload, global harmonized drive cycles (aka WLTP proposed by the UNECE) should be considered. [NHTSA-2010-0131-0253-A1, pp. 3-4]

Organization: Manufacturers of Emission Controls Association (MECA)

Current U.S. light-duty CAFE/greenhouse gas emission requirements both use the FTP and highway fuel economy test cycles with specified weighting to determine a vehicle's fuel economy. The current weighting puts a larger emphasis on fuel consumption (or greenhouse gas emissions) during urban driving (FTP test cycle) than highway driving (highway fuel economy

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test cycle). EPA recently switched to a 5-cycle approach for light-duty vehicle fuel economy labeling. The rulemaking documents associated with EPA's new fuel economy label requirements provide important information and data that supports the choice of this 5-cycle approach as more representative of how vehicles are driven by U.S. vehicle owners compared to the current CAFE 2-cycle requirement. [EPA-HQ-OAR-2010-0799-9452-A3, p.3]

MECA believes that any regulatory requirements associated with greenhouse gas emissions should be based on real-world driving or usage patterns in order to ensure that regulatory standards reflect actual vehicle operations and deliver the greenhouse gas emission reductions that are needed. Vehicle manufacturers and emission control technology manufacturers need a valid test cycle for greenhouse gas emission to engineer and evaluate vehicles consistent with how they are used by the public. The weighting of the test cycle between urban and highway driving modes will have a significant influence on the choice and optimization of powertrain options that will be used to meet any future greenhouse gas emission or fuel economy standards. Work is already underway in Geneva, Switzerland under the United Nations GRPE harmonization umbrella to bring forward a new light-duty vehicle test cycle for use in quantifying real world greenhouse gas emissions. EPA and California should utilize test cycles for the purpose of measuring and controlling vehicle greenhouse gas emissions that are representative of real world driving patterns. [EPA-HQ-OAR-2010-0799-9452-A3, pp.3-4]

Organization: Marz, Loren C.

EPA needs to adjust the methodology for calculating 'combined' mileage for the purposes of CAFE. The 55% city/45% highway mix is apparently no longer representative based on the 43% city/57% highway mix EPA now uses in its MOVES model and also used in Argonne National Laboratory's GREET model. Furthermore, Bosch reports that based on a recent GPS study in California, the median driving intensity is between the highway (HWFET) and US06 cycles (<http://www.erc.wisc.edu/documents/symp09-Freitag.pdf> - slide #24). Having an unrepresentative drive cycle mix will skew how effective the results of proposed rule will be in the real world, and inappropriately favors hybrid/EV/PHEV/FCV technology in CAFE calculations. [NHTSA-2010-0131-0213-A1, p.5]

This is already becoming apparent based on a study by Oak Ridge National Laboratory (Lin, Z., and Greene, D. 'Predicting Individual Fuel Economy.' SAE Technical Paper #2011-01-0618) as the current 5-cycle fuel mileage values underestimate hybrid fuel mileage by an average of about 10%, while the fuel mileage of diesel vehicles is underestimated by an average of about 25%. EPA essentially acknowledged this trend in a 2006 publication ('Final Technical Support Document - Fuel Economy Labeling of Motor Vehicle Revisions to Improve Calculation of Fuel Economy Estimates', page 8). [NHTSA-2010-0131-0213-A1, p.5]

Organization: Massachusetts Institute of Technology (MIT)

We are submitting our Report titled "U.S. CAFE Standards: Potential for Meeting Light-duty Vehicle Fuel Economy Targets, 2016-2025" which we have prepared as our response to the joint NHTSA and EPA proposal for extending the U.S. National Program to further improve light-duty vehicle fuel economy and reduce greenhouse gas emissions, for model years 2017 through

2025. It is based on our research of the past year or so, using a forwardlooking stochastic fleet assessment model for analyzing the impact of uncertainty on projected future light-duty vehicle fuel use and greenhouse gas emissions (Bastani, P. Heywood, J.B., Hope, C., SAE paper 2012-01-0647, SAE 2012 World Congress, Detroit, MI), with appropriate assumptions for future average car and light-truck operating characteristics and sales volumes. [NHTSA-2010-0131-0229-A1, p.1] [[See Docket Number NHTSA-2010-0131-0229-A1, pp3-35 for the report.]]

We quantitatively analyze three different scenarios. First, we define an “operational space” within which we evaluate specific scenarios, using evolving upper and lower bounds on the assumed vehicle characteristics, sales volumes of each major technology, and anticipated travel demand. Within this context we show that:

1. With our “plausible yet ambitious” scenario, (see Bastani, P., Heywood, J.B., & Hope, C., Transportation Research Part A, vol. 46, pp. 517-548, 2012) the likelihood of exceeding the 2016 fleet average targets is moderate for passenger cars, but very low for the combined car plus light-truck new vehicle fleets. The prospects of meeting the 2025 targets with this scenario are extremely low. [NHTSA-2010-0131-0229-A1, p.1]
2. With a more optimistic scenario where, for example, vehicle performance remains unchanged (a significant departure from the history of the last two or so decades), the prospects for meeting the 2016 fleet targets with passenger cars rises to some 50% but for the combined cars and light trucks sales are still only a few percent. The potential for the combined car and light truck sales meeting the 2025 targets on time is very low indeed. [NHTSA-2010-0131-0229-A1,p.1]
3. With the proposed EPA/DOT preferred alternative scenario, as spelled out in the proposed rule making, the prospects for meeting these targets are better: some 20% for the combined car and light truck fleet meeting the 2016 CAFE fleet-average targets, but still only about 15% for the 2025 targets. [NHTSA-2010-0131-0229-A1, p.1]

We hope that this probabilistic analysis with the logic behind its assumptions carefully explained (and referenced), with it’s detailed results and findings, will prove useful to you in your deliberations of these proposed CAFE requirements. [NHTSA-2010-0131-0229-A1, p.2]

Organization: Motor & Equipment Manufacturers Association (MEMA)

Test procedures must be more reflective of the real-world. The current and proposed standards do not address one of the core problems with the standards – outdated highway/city drive cycle averages. Real-world benefits can only be achieved with real-world measures. [EPA-HQ-OAR-2010-0799-9478-A1, p.2]

The current and proposed standards do not address one of the core problems – outdated highway/city drive cycle averages (a split of 55 percent city and 45 percent highway). The EPA’s own study illustrated the switch in driving behaviors since the original averages were set.² Real-world benefits can only be achieved with real-world measures. Changing the approach could have profound effects on deployment of research funds and capital investment, on the choices of

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vehicle technologies, and on the real-world results for the consumer, emissions reduction, and fuel efficiency. Otherwise, the industry will make cost-benefit decisions on technologies to maximize the fuel economy numbers with a 55-city/45-highway split and will make long-term technology and capital decisions without an assurance that those decisions will produce real-world results for the consumer and the country. Moreover, by continuing to use outdated mileage formulas for current, real-world city/highway driving averages, the result is another unintended consequence of influencing the market toward “preferred technologies” (because it is slanted towards city-like driving). [EPA-HQ-OAR-2010-0799-9478-A1, p.4]

While new test procedures would be beneficial for real-world evaluation of CO₂ and fuel efficiency, until such time they are implemented, off-cycle credits are a good way to ensure manufacturers are encouraged to introduce technology(ies) that result in real-world improvements. Although, MEMA recognizes the challenges with the tall task of changing the FTP/HFET, we urge the agencies to continue to actively work on global harmonization efforts to develop test cycles that better reflect real-world driving habits and performance so that, ultimately, the root causes can be addressed, resolved and incorporated for future iterations of this Program. [EPA-HQ-OAR-2010-0799-9478-A1, p.4]

Test procedures must be more reflective of real-world conditions. [EPA-HQ-OAR-2010-0799-9478-A1, p.13]

Organization: National Automobile Dealers Association (NADA)

The final rule should be as performance-based as possible and, in doing so, treat all compliance technologies as fairly as possible. Unfortunately, the single CAFE test cycle inherently serves to disadvantage certain technologies over others to the extent that it fails to account for how those technologies are actually used. For example, vehicles with hybrid and plug-in technologies benefit from test cycles that emphasize city driving, vehicles with start-stop technologies benefit from test cycles with long idling periods, and vehicles with diesel engines benefit from cycles with a higher proportion of highway driving. To the extent allowed by law, where NHTSA and EPA have data showing that certain technologies are or will be used in a manner that varies from the CAFE test, or that are off-cycle, appropriate adjustments should be made. Moreover, appropriate adjustments should be made to the final rule to reflect that real world gasoline does not offer as much energy potential as the fuel used in the CAFE test. [EPA-HQ-OAR-2010-0799-9575-A1, pp. 10-11]

Organization: Necheles, L.

I am only a Juvenile Attorney so I honestly don't have a science background. What I am concerned about and can comment upon, as a lay person, is how the EPA calculates vehicle fuel mileage as seen on the stickers of new cars. 'EPA estimated fuel mileage.' [EPA-HQ-OAR-2010-0799-2487-A1, p. 1]

Based upon personal experience and observation, the current calculated gas mileage shown on stickers does not reflect reality. The Consumer Reports or Car and Driver 'observed' fuel mileage is the best indicator and predictor of fuel mileage that I have at my disposal. Please consider

testing vehicles under real-world, reliable conditions. For instance, for Highway Driving: [EPA-HQ-OAR-2010-0799-2487-A1, p. 1]

1. Use ordinary fuel purchased from a local retailer-gas that might be contaminated with water or particles or may not be 87 Octane...fill the car with gas like an everyday consumer. 2. Drive the car at speeds of 70-75 miles per hour. 3. Use an interstate like the Pennsylvania Turnpike or Kansas Turnpike that contain hills. 4. Use full throttle at least once to simulate overtaking a truck. 4. Use the AC and CD player and a phone charger..load on the engine. 5. One tire at least 5 pounds under inflated. 6. 50 pounds of junk in the trunk....i.e. extra coolant, window washer fluid, jumper cables, tire inflator, flash light, groceries, kids toys, car seats, etc. (Items people lug around everyday) 7. Headwinds and cross winds of at least 10 mph should be factored in. 8. Slow down and speed up for 'construction zones' and make a full stop for a simulated rest room break;. 9. Use a front plate on the car. [EPA-HQ-OAR-2010-0799-2487-A1, p. 1]

Organization: Securing America's Future Energy (SAFE)

Vehicle Testing Procedure: The testing procedure that EPA uses to measure vehicle fuel economy is outdated, does not reflect actual driving patterns, confuses the public, undermines agency credibility, and ultimately discourages consumers from purchasing efficient and cost-effective vehicles. [EPA-HQ-OAR-2010-0799-9518-A1, p. 14]

For the purpose of measuring fuel economy for fuel economy and carbon emission regulations, EPA relies of two tests developed in the 1960s and 1970s that simulate urban and highway driving at relatively low speeds, in moderate weather, and without operating any vehicle accessories. In the 1980s EPA started adjusting the fuel economy measurements downward for the purpose of calculating the fuel economy that was placed on vehicle fuel economy labels so that the figure would more closely reflect actual driving experiences. As the gap between real world fuel economy and the figures on the label continued to grow, the Energy Policy Act of 2005 required EPA to revise its calculation for fuel economy labels again. Beginning with MY 2008 vehicles, EPA employed an updated test procedure which added three drive cycles to the calculation to evaluate fuel economy at high speeds, in cold weather, and in hot weather. Yet for fuel economy and carbon emission regulations, EPA continues to rely solely on the original drive cycles that are forty years old. They are estimated to overstate actual fuel economy by about twenty percent. [EPA-HQ-OAR-2010-0799-9518-A1, p. 14]

Yet in this proceeding, the characterization of fuel economy is more complex because in addition to calculations of fuel economy based on fuel consumption, the proposal reports calculations of fuel economy that are really fuel economy equivalents of emission standards. In the proposed rule and the accompanying announcements the agencies characterized the requirements that automakers will have to achieve by MY 2025 as “equivalent to 54.5 miles per gallon (mpg) if the vehicles were to meet this CO₂ level all through fuel economy improvements.” It was this level of fuel economy that both agencies highlighted in their press materials and which was widely reported in the mainstream media. [EPA-HQ-OAR-2010-0799-9518-A1, pp. 14-15]

EPA Response to Comments

In reality, all emission reductions will not be achieved through improvements in fuel economy. The agencies acknowledge this point, which is reflected in the fact that NHTSA stated that the fuel economy actually required pursuant to the rule would be 49.6 MPG. NHTSA then proceeds to explain that that estimate, however, also is overstated because it does not account for regulatory flexibilities that it is not allowed to consider in establishing the standards. NHTSA estimates that the achieved fuel economy under the proposed rule would yield a fleet average of 47.0 MPG. Yet even that estimate only reflects the estimated achieved fuel economy measured using the outdated test procedures. The 47 MPG estimate probably overstates the mileage that will be reflected on a vehicle's fuel economy label by about 20 percent, meaning that the fuel economy label would indicate a fuel rating closer to 38-40 MPG. And, even the figure on the label often overstates the vehicle's actual fuel economy, a point that contributed to a Honda Civic owner successfully suing Honda because her Civic Hybrid achieved far poorer fuel economy that indicated on the vehicle's label. [EPA-HQ-OAR-2010-0799-9518-A1, p. 15]

Therefore, in this instance, there may be as many of five different figures by which one could characterize the fuel economy requirements in the rule, enough to confuse most any consumer. [EPA-HQ-OAR-2010-0799-9518-A1, p. 15]

In the preamble to the rule, the agencies noted that consumers often choose not to make cost-effective investments in efficiency. The agencies identified several reasons why consumers might not purchase more fuel efficient vehicles that are cost effective, suggesting that consumers might be myopic, lack information to estimate the value of fuel savings, or might associate fuel efficiency with small poorly made cars, among other reasons. [EPA-HQ-OAR-2010-0799-9518-A1, pp. 15-16]

The agencies should consider the extent to which multiple measures of fuel economy undermines confidence in the accuracy of the calculations, making it difficult for reasonable consumers to have any confidence in any single fuel economy number, or the calculations of cost-effectiveness based on them. SAFE believes that EPA should once again revise the test procedures to more closely reflect real world driving conditions and use the revised test in its carbon emission regulations. Likewise, NHTSA should use an updated test procedure for lightduty trucks, though it cannot adjust the test procedure for cars without Congress updating the statute. More importantly, however, EPA and NHTSA should work together to determine how to simplify the calculation of fuel economy so that it most accurately reflects real world conditions. They should then propose to Congress the appropriate changes to the law so that they may replace outdated and inconsistent test procedures with more accurate ones that will inspire confidence in the regulation system instead of undermining the public's confidence in it. [EPA-HQ-OAR-2010-0799-9518-A1, p. 16]

Organization: Sierra Club, Environment America, Safe Climate Campaign, and Clean Air Council

Take steps to address testing issues: Both agencies have recognized that the standards do not correlate with the mileage or emissions of vehicles consumers should expect to see in dealership showrooms or experience on the road. While the standards that are proposed for 2017-2025 vehicles are anticipated to yield a fleet of new vehicles in 2025 that averages 54.5 mpg (if all

improvements are made through efficiency) and emits 163 g/mi of CO₂, there are various factors that reduce this standard to the much lower average of 37 miles per gallon that consumers will see on new vehicle labels. [EPA-HQ-OAR-2010-0799-9549-A2, p. 9]

In a report released last summer, Sierra Club detailed the history of CAFE standards and the testing regime that is used to set the standards and measure compliance. This testing regime remains as it was prescribed in the original fuel economy law. Testing for determining the mileage and now greenhouse gas information has gone through several updates with the goal of providing consumers shopping for new vehicles more accurate information. As a result of the divergent testing regimes, there is a confusing set of numbers - one for standards (i.e., the proposed 54.5 mpg and 163 g/mi CO₂ fleetwide average in 2025) and another that reflects the on-road impact of the program (i.e., consumers should anticipate vehicles averaging 37 mpg in 2025, not 54.5 mpg). Our report detailed how we ended up with a confusing set of numbers that persists with these proposed standards. [EPA-HQ-OAR-2010-0799-9549-A2, p. 9]

In the proposed and final rules for 2012-2016 vehicles both EPA and DOT recognized the disparity between standards and on-road mileage and pledged to address the issue before issuing further standards. The process for further standards launched within weeks of that those standards were final and the MPG values used to define the standards and the discrepancy between standards and labels is now further impacted by the accounting for AC and off-cycle reductions in the standard setting process. In the NPRM, the “on road fuel economy gap is recognized, and the agencies continue to apply a 20% discount to the standards to assess real world mileage and emissions and in calculating benefits associated with the standards. [EPA-HQ-OAR-2010-0799-9549-A2, p. 9]

The agencies are proposing in this rule to revise testing for purposes of measure compliance with the standards to account for some changes in air conditioning systems and some “offcycle” reductions, but this leaves the actual standards themselves still tied to outdated testing. As we noted in our report and in comments to the MY 2012-16 rule, steps could and should be taken to address the outdated testing used for setting the standards and to ensure that the public is fully and fairly informed. The fact remains that today’s new vehicles average in the low 20 mpg range and new vehicles in 2025 will be nearly twice as efficient, on average. Consumers, however, who shop for a new vehicle in 2025 should seeing label values average around 37 mpg, not 54.5 mpg. While the proposed rule indicates that adjustments will be made for testing for compliance with fuel efficiency standards, we continue to urge both agencies to take steps to reform testing for setting the standards and to take steps to inform the public about the standards and what consumers should expect to see in dealerships. [EPA-HQ-OAR-2010-0799-9549-A2, pp. 9-10]

Organization: Smith, Frank Houston

EPA versus NEDC Test Cycles

Regarding the relationship between NEDC and EPA test cycles please consider ...

NEDC and fuel frugal diesels: Compare

EPA Response to Comments

<http://www.autocar.co.uk/SpecsPrices/SpecsAndPricesEdition/Volkswagen-Jetta-2.0-TDI-140-SE-/62466/> at 58.9 mpg(Imperial) combined ==> converts

to ~49 mpg(US) to US Individual (user) MPG Estimates

<http://www.fueleconomy.gov/mpg/MPG.do?action=mpgData&vehicleID=31577&browser=true&details=on> at 45.5 mpg(US) with roughly 75% highway ... with an EPA sticker of 34/42 mpg(US) combined/highway. [NHTSA-2010-0131-0240-A1, p.3]

Which better reflects US user estimated average experience, US sticker or the convert NEDC value? I believe you will find that the converted NEDC value (for diesels) more closely reflect USER Average experience. This appears to be relatively typical for Audi and VW's This tracking relationship between US user AVERAGE mpg experience and the converted NEDC combined mpg(Imperial) values seems to be relatively consistent for fuel frugal small displacement (Further, these VW/Audi vehicles are certainly NOT the best available diesel fuel economies in the world compared to 2.0~1.5 US gallons/100 miles that is more or less standard practice for significant portions of the > 49 mpg(US) combined EU offerings as demonstrated by Table 5 above... with diesel machines that look and function much like ones already in the US ... EXCEPT for superior fuel economy. [NHTSA-2010-0131-0240-A1, p.3]

Organization: Tarazevich, Yegor

CAFE should be measured in EPA real world test numbers otherwise manufactures would continue to learn tricks to show even higher CAFE numbers which do not translate to real world numbers. 30 years ago CAFE MPG were very close to real world MPG but right now, CAFE 54.5 MPG in real world means only 40 MPG. Otherwise in 2025 CAFE 54.5 MPG could become EPA 35 MPG only. [NHTSA-2010-0131-0199, p.1]

Organization: U.S. Coalition for Advanced Diesel Cars

Emissions testing and calculations that: [NHTSA-2010-0131-0246-A1, p.2]

Use market fuel rather than higher energy content laboratory fuel; [NHTSA-2010-0131-0246-A1, p.2]

Employ real-world driving conditions; [NHTSA-2010-0131-0246-A1, p.2]

Accurately reflect the full environmental impact of each technology (not just at the vehicle's tailpipe); and [NHTSA-2010-0131-0246-A1, p.2]

The Coalition continues to advocate for fuel economy calculations that provide the clarity consumers require to make informed decisions and select a vehicle that best meets individual driving needs. This includes up to date calculations for real world driving and steps to limit the disparity between fuel economy measurements achieved in the laboratory and the real world. [NHTSA-2010-0131-0246-A1, p.10]

Real World Driving [NHTSA-2010-0131-0246-A1, p.10]

During the comment period for the MY 2012-2016 joint rulemaking on CAFE, the Coalition called attention to EPA and NHTSA's failure to utilize real world driving calculations. EPA's own data from a 2006 study confirms that the average American accumulates the majority of their miles at highway conditions. In spite of this, calculations that indicate drivers accumulate the majority of their miles in urban conditions were utilized for the MY 2012-2016 rule, and are again used in the MY 2017-2025 proposed rule. [NHTSA-2010-0131-0246-A1, p.10]

Interestingly, EPA is not using its own data and public information to calculate the most accurate fuel economy for CAFE despite the fact that it already utilizes the 2006 data to calculate the societal benefits resulting from the implementation of advanced vehicle technology. Because the calculations inaccurately reflect the driving patterns of the average American, EPA and NHTSA are causing automakers to disproportionately employ technologies that perform well in urban duty cycles in new vehicles, causing automakers to lean toward technologies that are not optimized for the needs of the average American driver. [NHTSA-2010-0131-0246-A1, p.10]

The NPRM states that EPA and NHTSA are considering significant changes to test procedures in response to the wide array of vehicle technologies available. The agencies have also stated that they lack the statutory authority to change some of these calculations. If EPA and NHTSA have determined that they lack the statutory authority to update the calculations to reflect the real world driving habits of the current American driver, the agencies should educate Congress on the impacts of this flawed statute and formally ask for the statutory authority from Congress to update the calculations. Instead, the current proposals risk yet another rulemaking process that will propagate the outdated and inaccurate 1975 calculations for the next decade and beyond. [NHTSA-2010-0131-0246-A1, p.11]

[These comments were also submitted as testimony at the Detroit, Michigan public hearing on January 17, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11786, pp. 248-249.]

By continuing to use outdated calculations, it may very well appear that manufacturers have reached the new fuel economy and emissions goals, but it is likely that the real-world impact will fall short of our nation's targets. Additionally, a significant disparity will continue between actual fuel economy and what consumers were expecting when they purchased their vehicles. This is evident from the recent class-action and small claims litigation by thousands of hybrid owners. In the Detroit Free Press on January 6, 2012, Neil Schmidt, a technical specialist for American Honda, explained the disparity between fuel economy on the sticker versus what the drivers were actually achieving. 'We have no choice. We have to put these numbers on the label.' He noted the small type on the label, which gave a listing of 41 to 57 miles on average, saying, 'This is more toward the real world.' The important point for this discussion is that government standards need to be consistently based on real-world driving patterns for the American consumer, and therefore optimized for highway driving, to achieve the greatest real world results. [NHTSA-2010-0131-0246-A1, p.11]

Organization: Volvo Car Corporation (VCC)

EPA Response to Comments

CC has put considerable time and effort into maintaining a high degree of accuracy by having well-developed arrangements to monitor calibrations, checks, and all critical processes in our emission laboratory. We work continuously to monitor and improve the correlation and repeatability of our test rooms. Thus, VCC realizes that test procedures, calibrations, and instrumentation must be regularly reviewed and renewed to meet new challenges. [EPA-HQ-OAR-2010-0799-9551-A2, p.13]

In the fall of 2011 EPA proposed, under TIER 3, to consolidate all test procedure requirements of Parts 86 into Part 1066 in order to improve their organization, including references to Part 600. In doing this, some test procedures will remain as they are, some will evolve, and new ones will be introduced. This will also come to affect procedures that involve CO₂ /FE. This has to be considered. [EPA-HQ-OAR-2010-0799-9551-A2, pp.13-14]

Along with the industry, VCC pointed out that close industry-EPA collaboration is critical to ensuring that test procedures are relevant, adequate, and meet the objective standards so that the tests can be reproduced and replicated. The initial EPA proposal would have required major investment from VCC, but based on current discussions there appears to be an understanding that there are other possible ways to address measurement. [EPA-HQ-OAR-2010-0799-9551-A2,p.14]

VCC has therefore been actively involved in addressing issues directly with the EPA and through the Alliance on the proposal that was presented by EPA in November 2011. Based on VCC's ongoing analysis of Part 1066, VCC believes that these proposed processes would benefit from thorough revision, in cooperation with the industry, to minimize the risk of creating processes that will add very little value to good repeatability and accuracy. EPA has recognized industry's challenges and therefore continues to work with industry on this issue. VCC would welcome CARB's participation in that dialogue. [EPA-HQ-OAR-2010-0799-9551-A2, p.14]

Currently there are crucial differences between CARB and EPA advanced technology vehicle test procedures that would benefit from harmonization. [EPA-HQ-OAR-2010-0799-9551-A2, p.14]

Hybrid Test Procedures

The hybrid test procedures need to be updated to reflect a common approach between EPA and CARB. EPA extensively refers to SAE J1711 test procedures updated during 2010. The J1711 test procedures are the result of many years of cooperative work between industry and government, which includes EPA and CARB. CARB's corresponding test procedures are based on J1711 of 2008/2009. There are several changes between these two versions which are going to generate extensive updating. If the harmonization does not occur, there will be unnecessary additional test burdens on the industry as a result of duplication of testing and uncertainty concerning the certification requirements. [EPA-HQ-OAR-2010-0799-9551-A2, [p.14]

Organization: Weiner, L.

[These comments were submitted as testimony at the San Francisco, California public hearing on January 24, 2012. See Docket Number EPA-HQ-OAR-2010-0799-11787, pp. 107-108.]

It's important that agencies develop new, precise test procedures that actively calculate the true mileage and not an overestimation, as has happened before.

Response: